

Bryan W. Shaw, Ph.D., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*



EPA

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 22, 2013

MR RAY BROOKS
REFINING GENERAL MANAGER
BLANCHARD REFINING COMPANY LLC
PO BOX 401
TEXAS CITY TX 77592-0401

Re: Permit Alteration
Permit Number: 47256
Galveston Bay Refinery
Texas City, Galveston County
Regulated Entity Number: RN102535077
Customer Reference Number: CN604166868
Account Number: GB-0004-L
Associated Permit Number: PSDTX402M3

RECEIVED
13 OCT 30 PM 3:18
AIR PERMITS DIVISION

Dear Mr. Brooks:

This is in response to your letter received September 16, 2013, requesting alteration of the conditions of the above-referenced permit. We understand that you wish to include authorization in Special Condition 5 E allowing tanks that are aluminum or painted white to be painted with logos, slogans, and similar displays ($\leq 15\%$ of total surface area).

As indicated in Title 30 Texas Administrative Code § 116.721(b) [30 TAC § 116.721(b)], and based on our review, Flexible Permit Number 47256 is altered. Enclosed are the altered special conditions and new permit face to replace those currently attached to your permit. Please attach these to your permit.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Ms. Nikki Carson at (512) 239-2057 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Ray Brooks
Page 2
October 22, 2013

Re: Permit Number: 47256

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Sincerely,



Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

MPW/bc

Enclosure

cc: Director, Office of Environmental Health Pgm Air & Water Pollution Svc, Galveston County
Health District, La Marque
Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review, Section (6PD-R), U.S. Environmental
Protection Agency, Region 6, Dallas

Project Number: 198569



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT



A Permit Is Hereby Issued To
Blanchard Refining Company LLC
Authorizing the Construction and Operation of
Galveston Bay Refinery

Located at **Texas City, Galveston County, Texas**

Latitude 29° 21' 38" *Longitude* 94° 55' 14"

Permit: 47256 & PSDTX402M3

Revision Date : October 22, 2013

Renewal Date: July 13, 2015


For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Special Condition Nos. 5 through 56 apply to the normal operations of the facilities authorized under this permit. Special Condition Nos. 57 through 68 apply to the planned maintenance, startup, and shutdown activities authorized by this permit.

Emission Caps and Individual Limitations

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Emission Caps and Individual Emission Limitations," (ECIELT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the ECIELT and other requirements specified in the special conditions.

Planned startup and shutdown emissions due to the activities identified in Special Condition No. 57 are authorized from facilities and emission points identified in Attachment D in other construction permits at the site provided the facility and emissions are compliant with the respective ECIELT and special conditions, or Special Condition No. 66 of this permit. (8/10)

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U. S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, and:
 - A. Sulfuric Acid (H_2SO_4) Production Units, Subpart Cd;
 - B. H_2SO_4 Plants, Subpart H;
 - C. Petroleum Refineries, Subpart J (**per Agreed Order Docket No. 2005-0224-AIR-E**);
 - D. Storage Vessels for Petroleum Liquids, Subpart K;
 - E. Volatile Organic Liquid Storage Vessels, Subpart Kb; and
 - F. Equipment Leaks of Volatile Organic Compounds (VOC) in Petroleum Refineries, Subpart GGG. (8/10)
3. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) in 40 CFR Part 61, Subparts A, and:

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

- A. Equipment Leaks of Benzene, Subpart J;
 - B. Equipment Leaks, Subpart V;
 - C. Benzene Transfer Operations, Subpart BB; and
 - D. Benzene Waste Operations, Subpart FF.
4. These facilities shall comply with all applicable requirements of EPA regulations on NESHAPS in 40 CFR Part 63, Subparts A, and:
- A. Petroleum Refineries, Subparts CC;
 - B. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recover Units, Subpart UUU; and
 - C. Marine Vessel Loading Operations, Subpart Y.

Operational Limitations, Work Practices, and Plant Design

5. Storage tanks are subject to the following requirements: The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
- A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal. Installation of equivalent control requires prior review and approval by the Texas Commission on Environmental Quality (TCEQ) Executive Director.
 - B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

- C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
- D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (API) Code 650, or an equivalent degree of flotation, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

The floating roof design for all new or retrofitted roofs shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 or later except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

- E. Except for labels, logos, etc. not to exceed fifteen (15) percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum except where a dark color is necessary to help the tank absorb or retain heat in order to maintain the material in the tank in a liquid state. The following existing tanks are exempt from the white or aluminum requirement: Fixed-Roof Tanks 41, 42, 59, 60, 60A, 73, 73A, 1012, and 1013. Storage tanks must be equipped with permanent submerged fill pipes. (10/13)
 - F. The permit holder shall maintain records which includes tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. (8/10)
6. Pressure tanks shall be maintained such that there are no emissions of VOC to the atmosphere during normal operating conditions (including filling operations). If emissions occur during normal operations, they shall be routed to a flare which achieves at least 98 percent destruction efficiency.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

7. Marine vessel loading operations at this facility are limited to the handling of gasolines, gasoline blending components, gasoline boiling range products, toluene, benzene, distillates, and black oils. Benzene shall only be loaded at one dock at any time. (2/13)
8. Loading emissions from marine loading operations at Dock 54E shall be routed to a thermal oxidizer (EPN 1300) which shall operate at a minimum VOC destruction efficiency of 99.9 percent by weight. The thermal oxidizer firebox temperature shall be maintained at not less than 1800°F on a six minute average period while loading emissions are directed to the oxidizer. After the initial stack test has been completed, the six minute average temperature shall be maintained greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 39.

The thermal oxidizer temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^\circ\text{C}$.

Quality assured (or valid) data must be generated when the thermal oxidizer is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the thermal oxidizer operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (2/13)

9. Loading emissions from marine loading operations at docks other than Dock 54E shall be routed to thermal oxidizers (EPNs 294-1, 294-2, and 294-3) which shall operate at a minimum VOC destruction efficiency of 99 percent by weight. During loading operations, the minimum operating temperature of the thermal oxidizers shall be 1250°F. Records of thermal oxidizer operating temperatures shall be kept for each loading operation. (2/13)
10. Loading rates at the marine docks other than Dock 54 shall be reduced as needed in the event that two of the thermal oxidizers are inoperable. Loading of hydrocarbons with a true vapor pressure of greater than or equal to 0.5 psia at maximum temperature shall cease in the event that all thermal oxidizers are inoperable. Records shall be kept for each loading operation and shall include the name and quantity of material loaded. Operation without visible liquid leaks or spills shall be maintained at all loading/unloading facilities, regardless of vapor pressure. (2/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

10. Marine dock thermal oxidizers other than at Dock 54 (EPNs 294-1, 294-2, and 294-3) shall operate with greater than a stoichiometric quantity of air at all times. (2/13)
11. The holder of this permit shall maintain marine vessel loading equipment in such a manner that vapor-tight connections are made between the dock and the marine vessel. A blower system shall be installed which will produce a vacuum during vapor controlled loading operations (liquid VOC vapor pressure greater than or equal to 0.50 psia). Should the blower system cease operating for any reason, loading operations shall cease immediately. The vacuum system shall be repaired before loading operations can resume. A pressure/vacuum gauge shall be installed such that a negative pressure can be verified in the vessel and/or compartment being loaded. The vacuum shall be recorded every 15 minutes when loading. A vacuum of at least three inches of water shall be maintained during loading. Records of all blower system repairs and associated downtime shall be maintained. (2/13)
12. The marine dock thermal oxidizers shall be equipped with an automatic ignition system that assures gas ignition before loading and provides immediate notification of appropriate personnel when the ignition system ceases to function.
13. Uncontrolled loading of marine vessels without the use of vapor control is allowable under this permit for those materials that have a true vapor pressure of less than 0.50 psia at the actual loading temperature, provided that all applicable federal and state rules and regulations are met.
14. All flares shall be designed and operated in accordance with the following requirements:
 - A. The combined refinery fuel natural gas and waste stream to the flare shall meet the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Compliance with this condition shall be demonstrated by monitoring required in Paragraph D of this condition. Flare testing per 40 CFR § 60.18(f) may be requested by the TCEQ Houston Regional Office, in addition to New Source Performance Standards (NSPS) or federal requirements, to demonstrate compliance with this condition. Testing to confirm the heating value (Btu per standard cubic feet [scf]) may be requested by the TCEQ Houston Regional Office to demonstrate compliance with this condition.
 - B. The flare(s) shall be operated with a pilot flame present at all times and have a constant pilot flame or an automatic re-ignition system. The pilot flame shall be monitored by a thermocouple or an infrared monitor.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

- C. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare (for steam-assisted flares). The permit holder shall ensure proper flare operation through monitoring by Paragraph D of this condition.
- D. The holder of this permit shall install a continuous flow monitor that provides a record of the vent stream flow to the flare. The flow monitor sensor should be installed in the vent stream such that the total vent stream to the flare is measured. The average hourly values of the flow shall be recorded and maintained electronically. The holder of this permit shall provide the daily average flow rate (24-hour average) to each flare. These monitors shall be operational no later than July 13, 2010.

The holder of this permit shall conduct an analysis (grab sample) of the flare composition (total VOC, benzene, hydrogen sulfide (H₂S), and Btu content) on or before May 31, 2007. The analysis shall be conducted on a semiannual basis (once during the summer months and once during the winter months). The holder of this permit may submit a request to the TCEQ Houston Regional Office to reduce the sampling frequency. The sampling shall be conducted such that the total vent stream to the flare is included in the analysis. Records of the grab sampling results, including flare identification number, sampling date, sampling location, flare composition, and calculated net heating value in Btu/scf for each flare, shall be maintained. (PSD) (9/06)

- 15. Safety relief valves that discharge to the atmosphere only as a result of fire shall be equipped with a rupture disc and pressure gauge. The pressure gauge shall be installed between the relief valve and the rupture disc to monitor disc integrity.

Atmospheric relief valves which are not equipped with a rupture disc shall be monitored for leaks on a quarterly basis with an approved gas analyzer beginning no later than July 13, 2007. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves which are not equipped with a rupture disc and pressure gauge or pressure transmitting device.

All leaking discs shall be replaced at the earliest opportunity, but no later than the next unit shutdown. Discs to be replaced shall be identified on an equipment list, and this list shall be made available to TCEQ or local air pollution control program representative.

Records of quarterly atmospheric relief valve monitoring results, including the relief valve identification, monitoring date, monitoring result, disk replacement or installation date, and next unit shutdown date after leak discovery shall be maintained. (8/10)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

Sulfur Recovery/Amine Treating Units

16. The minimum sulfur recovery efficiency for these permitted units shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered}) * (100)}{(\text{S acid gas})}$$

Where:

| | | |
|-------------|---|---|
| Efficiency | = | sulfur recovery efficiency, percent |
| S recovered | = | (S acid gas - S stack, or S produced), long tons per day (LTPD) |
| S acid gas | = | (S recovered plus S stack), LTPD |
| S stack | = | sulfur in incinerator stack, LTPD |

The average sulfur emission reduction efficiency (sulfur recovery efficiency) shall be demonstrated for each 24-hour period by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide (SO₂) monitor, sulfur production records, stack mass flow rate, and other process flow data. Records of the calculated recovery efficiency, sulfur in the incinerator stack, sulfur produced, sulfur in the acid gas, the compliance calculations, and a detailed example of the compliance calculations shown above shall be maintained on-site. The sulfur recovery efficiency of this condition is not applicable during start-up, shutdown, or upset conditions if proper procedures of 30 TAC Chapter 101 are followed. **(PSD)**

17. The total sulfur recovered from the combined SRU Trains (Trains 1 through 4) shall not exceed 1300 LTPD of sulfur (based on a 24-hour period). At no time during normal operation shall the excess capacity be less than 75 percent redundancy. **(PSD)**
18. The SRU thermal reactors that receive ammonia acid gas from the sour water stripper overheads shall at all times be operated with a stable flame, and the SRUs shall operate with a flame temperature within recommended design specifications, but shall operate at no less than 2000°F. The flame temperature of each SRU thermal reactor shall be continuously monitored and recorded.
19. All acid gas streams from the amine regeneration units, and sour water stripper overheads, containing H₂S shall be routed to the SRUs or other process units under normal operating conditions. It is not permissible under any conditions to vent acid gases directly to the atmosphere. **(PSD)**

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 8

20. Emissions from the sulfur pits, sulfur storage, and sulfur loading operations shall be collected by a vapor collection system and routed either back to the SRU thermal reactor or to the SRU Tail Gas Incinerator (TGI). **(PSD)**
21. The minimum firebox chamber temperatures in the SRU TGIs shall not go below 1200°F during normal operating conditions. If stack testing in the TGI exhaust indicates that a higher temperature is necessary to obtain a minimum H₂S and VOC destruction efficiency of 99.9 percent, then the temperature obtained during the stack test will become the new minimum incinerator firebox chamber temperature. The firebox temperature of each TGI shall be continuously monitored and recorded.
22. The SRU TGIs shall operate with no visible emissions except for uncombined steam.
23. Contingency Plan for the SRU

Should there be loss of sulfur recovery potential from the Claus trains, TGTU, or TGIs, any combination of the following steps shall be taken as soon as possible, but no later than two hours from the start of the event:

- A. Reroute the maximum amount of acid gas to the operating SRUs or equipment (such as the remaining sulfur recovery trains, TGTU, and TGI). This action can include increasing the oxygen (O₂) injection rate to add SRU capacity.
- B. Reroute any remaining acid gas to the TGIs. If the TGIs are not operable, the acid gas should be routed to the emergency flares.
- C. Shut down the sour water strippers and accumulate sour water in tankage for future processing.
- D. Reduce production, reduce charge rates at upstream units, and switch to lower-sulfur purchased gas oils and crude oils as necessary to reduce the amine loading and cease acid gas flaring within eight hours of the event. This action may include shutting down one and/or all units which supply acid gas to the SRU complex.
- E. Any other action not listed that will allow the SRU to recover from the loss of sulfur recovery potential. All actions conducted under this paragraph shall be documented. The documentation shall include the specific action taken, time the action was taken, affect on upstream/downstream facilities (heaters, other control devices, etc), and overall affect on emissions from the SRU or other facilities. This documentation shall be included in any reports submitted to the TCEQ Houston Regional Office or local air pollution control program representative. This information shall also be

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 9

maintained on-site and made available to TCEQ or local air pollution control program representatives upon request.

The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.

24. Records shall be maintained for all SRU, Tail Gas Treating Unit (TGTU), and TGI downtime. These records shall include the date and duration of downtime, amount of bypassed acid gas flared, the cause of the downtime, and corrective action taken. The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.
25. The sour water stripper system feeding the SRUs shall have a minimum on-line retention and separation (hold up) time of three days based on normal operational levels and maximum expected feed rates.
26. The retention time of the rich amine and lean amine drums shall meet at least 30 minutes of retention at maximum production levels.

FCCUs

27. The final emission caps are based on FCCUs 1 and 3 (Emission Point Nos. [EPNs] 93 and 34) meeting the following concentrations, averaged over a one-hour period.

| | |
|-----------------------------------|----------|
| carbon monoxide (CO) | 500 ppmv |
| SO ₂ | 200 ppmv |
| nitrogen oxide (NO _x) | 200 ppmv |
| VOC | 10 ppmv |

The initial emission caps are based on the following: 500 ppmv CO, and 300 ppmv SO₂ from FCCU 1, and 500 ppmv CO from FCCU 3. **(PSD) (10/10)**

28. The final emission caps are based on the FCCU 1 stack meeting 1.0 pound of particulate matter (PM) per 1,000 pounds of coke burn-off. The final hourly emission cap and individual annual emission limit for FCCU 3 are based on the FCCU stack meeting 0.914 pounds of PM per 1,000 pounds of coke burn-off. The individual hourly and annual emission limits for FCCU 3 are based on the FCCU 3 stack meeting 0.33 pounds of H₂SO₄ per 1,000 pounds of coke burn-off. The PM and H₂SO₄ emissions will be measured per the EPA Methods 5B and 8/TCEQ 24 or other applicable method approved by the TCEQ). **(PSD) (12/11)**

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 10

29. For the final ammonia emission cap, the FCCU 1 electrostatic precipitator shall not exceed 10 ppmv ammonia slip. The ammonia injection rate to the FCCU shall be continuously monitored and recorded. **(12/11)**
30. The opacity of emissions from the FCCUs shall not exceed 20 percent averaged over a six-minute period, as determined by an opacity monitoring device or trained observer, except as provided for in 30 TAC § 111.111(a)(1)(E).
31. The seven-day rolling average of NO_x and SO₂ concentration limits below shall not apply during periods of start-up, shutdown, or malfunction. **(10/10)**

A. FCCU 1 NO_x Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a NO_x limit of 40 ppmvd at zero percent O₂ on a 365-day rolling average and 80 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average NO_x limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

B. FCCU 3 NO_x Concentration Limits

If the permit holder has installed a selective catalytic reduction (SCR) unit on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 20 ppmvd at zero percent O₂ on a 365-day rolling average and 40 ppmvd at zero percent O₂ on a 7-day rolling average basis.

If the permit holder has not installed an SCR on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 30 ppmvd at zero percent O₂ on a 365-day rolling average and 60 ppmvd at zero percent O₂ on a 7-day rolling average basis.

The seven-day rolling average may increase temporarily to 120 ppmvd if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder submits and EPA approves a report detailing reasons for the outage(s) of the SCR or NO_x

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 11

control device within 30 days after the outage occurs. The outages can only be due to reasons other than startup, shutdown or malfunction.

C. FCCU 1 SO₂ Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a SO₂ limit of 50 ppmvd at zero percent O₂ on a 365-day rolling average and 150 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average SO₂ limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

D. FCCU 3 SO₂ Concentration Limits

Beginning July 1, 2007, FCCU 3 (EPN34) shall comply with a SO₂ limit of 25 ppmvd at zero percent O₂ on a 365-day rolling average and 50 ppmvd at zero percent O₂ on a 7-day rolling average basis.

32. The FCCU 3 Regenerator Scrubber (EPN 34) liquid to gas ratio and gas pressure drop shall be continuously monitored and be maintained greater than the minimum one hour average value observed in the last satisfactory stack test performed in accordance with Special Condition 39. The initial stack test for EPN 34 was completed on May 6, 2008. A subsequent stack test will be performed in accordance with Special Condition 39 upon completion of the FCCU 3 Regeneration Project proposed in the amendment, PI-1 dated April 26, 2011.

The flow rates and pressures shall be recorded every 6 minutes as six minute averages and the pH shall be recorded every 15 minutes as 15 minute averages. Each flow and pressure monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

Quality assured (or valid) data must be generated when the FCCU is operating except during the performance of a daily zero and span check, if conducted. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the FCCU operated over the previous rolling 12 month

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 12

period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (12/11)

Fired Units (Heaters and Boilers)

33. The final emission caps are based on fuel gas (used to fire all heaters, boilers, oxidizers, incinerators, flares, and other combustion devices) having an H₂S concentration of 162 ppmv or 0.1 grain per dry standard cubic foot on a one-hour average basis. The H₂S concentration in the fuel gas system shall be continuously monitored and recorded. (PSD) (10/10)
34. The opacity from all heaters, boilers, etc., shall not exceed 5 percent averaged over a six-minute period, except for those periods described in 30 TAC § 111.111(a)(1)(E).
35. The final emissions cap is based on a combined average NO_x emission value of 0.035 lb NO_x/MMBtu from all boilers and heaters.
36. The UC-103B is limited to firing no more than 99 MMBtu/hr. Records verifying the firing rate for this unit shall be maintained on-site.

Wastewater

37. Emissions from wastewater process equipment shall be controlled as follows:
 - A. Emissions from the dissolved air flotation, gravity thickener, and API No. 2 shall be routed to a thermal oxidizer capable of obtaining a VOC destruction efficiency of 99.9 percent.
 - B. Emissions from APIs 1 and 3 shall be routed to a carbon adsorption system. The carbon adsorption system shall be installed and operating no later than July 13, 2010. The carbon adsorption system shall meet the requirements of Special Condition No. 47 of this permit.
 - C. Wastewater process equipment upstream of the biological treatment units (activated sludge) shall either be covered and/or routed to a control device (either a thermal oxidizer, flare, or carbon canister system). (10/10)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 13

Initial and Periodic Sampling Requirements

38. Sampling port(s) and platforms(s) shall be incorporated into the design of the combustion source stack(s) per specifications in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Platform(s) will not be necessary for existing stacks of combustion facilities that will not be equipped with continuous emissions monitoring system (CEMS) and do not currently have platform(s) included in their design. Alternate sampling facility designs may be submitted for approval by the Executive Director of the TCEQ.
39. The holder of this permit shall perform stack sampling and other testing, as required, to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the following sources:

| |
|---|
| FCCU 1 and 3 Stacks (EPNs 93 and 34) |
| SRU TGI exhausts before the Common Stack (EPN 384) |
| Marine Dock Thermal Oxidizers (EPNs 294-1, 294-2, 294-3, and 1300) |
| All boilers and heaters with firing rates of 40 MMBtu/hr or greater |
| In addition, common stacks (if any) containing units capable of 40 MMBtu/hr or greater shall also be sampled. |

The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Air Permits Division. Test waivers and alternate/equivalent procedure proposals for 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 14

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Houston Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the listed sources to be tested for include (but are not limited to) the following:

| | |
|---------------------------------------|---|
| FCCU | NO _x , CO, SO ₂ , VOC, TSP*, PM ₁₀ *, ammonia (FCCU 1 only), H ₂ SO ₄ , and O ₂ |
| SRU TGI(s) | SO ₂ , H ₂ S, H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Boilers, Heaters, Furnaces, etc | SO ₂ , H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Marine Dock Thermal Oxidizers | NO _x , CO, VOC, and O ₂ |
| Units equipped with ammonia injection | ammonia |

* TSP - total suspended particulate

* PM₁₀ - particulate matter equal to or less than 10 microns in diameter

- C. Sampling shall occur within 60 days after achieving the maximum production rate at which the facility will be operated, but no later than 180 days after start-up following modification or installation of a emission source (facility), or within 60 days after achieving normal operation (for those units being restarted due to Hurricane Rita), and other such times as determined necessary to verify compliance with the emissions cap as required by the TCEQ Houston Regional Director or the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the TCEQ Houston Regional Office.

The permit holder may submit a request to perform representative sampling for combustion units that are similar in function, heat input, etc. The request shall be submitted to, and approved by, the TCEQ Houston Regional Office before sampling begins.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 15

- D. The EPN being tested shall operate at maximum production, loading, or firing rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the EPN is unable to operate at maximum rates during testing, then additional stack testing may be required when higher firing rates are achieved. (Additional testing will not be required if the EPN is equipped with a CEMS.)
- E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed to the TCEQ Houston Regional Office.
- F. Stack sampling for those units which are not equipped with a CEMS shall be repeated every five years after the initial sampling in conformity with A, B, and D of this condition. Facilities which are not being modified and have been tested in the last five years shall be tested within five years of the last test date (even if those sources have not been tested for VOC during previous tests).
- G. For fired units equipped with ammonia injection, the initial compliance stack test shall test for the presence of ammonia slip in the stack. After the initial stack test, grab samples for ammonia shall be conducted weekly during the first 60 days of operation. After operating procedures have been developed to prevent excess amounts of ammonia from being injected, the frequency of ammonia grab sampling can be reduced to a quarterly basis. If the grab samples exceed 10 ppmv at any time, the holder of this permit shall return to weekly ammonia sampling until such time as repairs are conducted, or the sampling indicates that the ammonia slip is 5 ppmv or less.
- H. The two FCCUs shall be stack sampled for the presence of H_2SO_4 within 60 days after achieving normal operation (after the restart due to Hurricane Rita). The holder of this permit shall submit a permit amendment application within 60 days of completing the stack sampling of the FCCUs to incorporate the H_2SO_4 into an emissions cap, or list the H_2SO_4 emissions as an individual emission limitation. If necessary, the holder of this permit shall include netting calculations, and/or Prevention of Significant Deterioration forms, tables, etc. in the amendment package. The amendment package shall include all calculations, assumptions, best available control technology (BACT) determinations, and a proposal for determining compliance with the short-term and annual emission rate or caps. FCCU 3 satisfied this condition with the PSD amendment application (PI-1 dated April 26, 2011).
(PSD) (2/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 16

40. The holder of this permit shall submit a sampling and testing plan to the TCEQ Houston Regional Office (with a copy routed to the TCEQ Air Permits Division) for review and approval no later than September 13, 2005.

The sampling plan shall specify the sampling methods and other testing, as necessary, to establish the emissions (lb/hr and TPY) of VOC being emitted to the atmosphere from the wastewater system associated with this permit. Sampling and testing shall begin within 60 days of plan approval.

Within 30 days after completion of the sampling, copies of the sampling report shall be submitted to the following:

One copy to the TCEQ Air Permits Division, Austin.
One copy to the TCEQ Houston Regional Office.

Sampling of the wastewater system, as specified in this section, is waived if the permit holder determines that sufficient information is currently available to adequately model the wastewater treating system through the use of Water 8 or Water 9 wastewater model. The applicant shall submit revised emission calculations using one of these models, to the Air Permits Division for review and approval, no later than September 13, 2005 and one of the following permit applications.

- A. If the wastewater models show a decrease in the emission contribution from the wastewater treating facilities compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit alteration to adjust emissions cap to reflect the emissions obtained from the use of the water models.
- B. If the wastewater models show an increase in emissions compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit amendment to increase the final emissions cap. **(8/10)**

Ongoing Monitoring Requirements

41. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentrations of the following compounds from all of the following facilities by December 31, 2005: **(10/10)**

A. FCCU Stacks (EPNs 93 and 34): SO₂, NO_x, CO, Opacity, and O₂

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 17

- B. SRU TGI Stacks (EPNs 384): SO₂ and O₂.
 - C. A CEMS to measure and record the in-stack concentrations of NO_x, CO, and O₂ shall be operational and used to monitor emissions from any boiler, heater, or combustion device with a maximum firing rate greater than or equal to 100 MMBtu/hr.
42. Each CEMS required by these conditions shall comply with the following:
- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Air Permits Division for requirements to be met.
 - B. Paragraph B(1) of this condition applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Paragraph B(2) of this condition applies to all other sources:
 - (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the TCEQ Houston Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Houston Regional Director.
 - (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 18

the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly averages concentrations at least once everyday, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of lb/hr at least once every week as follows:

The measured hourly average concentration from the CEMS shall be multiplied by the exhaust gas flow rate of the source (measured by true exhaust flow meters, or measured during the latest stack test performed in accordance with Special Condition No. 39, or calculated using fuel flow meters required by §117.340) to determine the hourly emission rate.

- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The TCEQ Houston Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.
- F. Quality-assured (or valid) data must be generated when the facility generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Houston Regional Director. (PSD) (8/10)

43. Boilers, heaters, etc., with maximum firing rates of greater than or equal to 40 MMBtu/hr and less than 100 MMBtu shall be sampled in accordance with this condition. The terms of this condition are effective upon implementation of BACT for a particular device or for combustion devices for which additional controls are not anticipated no later than July 13, 2006.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 19

After completion of the initial stack test, the holder of this permit shall conduct annual stack tests for NO_x and CO. The stack test shall be comprised of no less than the average of three one-hour readings for each pollutant.

The results of the stack test shall be recorded in terms of ppm and converted into values of lb/hr and TPY within 30 days of sampling (unless a mass emission rate can be estimated at the time of the test). The annual stack tests shall start after the initial stack test for each unit and shall occur during the same quarter annually. Stack tests for those boilers and heaters that will not be modified, and are not required to complete the initial stack test in the first year from the issuance of the flexible permit (because they were tested within the last five years), will be completed no later than July 13, 2006. The SO₂ emissions from the unit being tested shall also be estimated on an annual basis using the H₂S concentrations obtained from the H₂S fuel gas monitoring system and the fuel flow rate to the unit being tested.

In addition to the above testing requirements, the fuel flow rate (along with other parameters determined at the pretest meeting to be essential for monitoring a unit's performance) shall be continuously monitored and recorded. Beginning no later than September 13, 2005, the heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling.

Should the stack test from a particular unit indicate an exceedance of the short-term (lb/hr) and/or annual (TPY) emission rate used in the emission cap calculation, the applicant shall provide adequate information to demonstrate continuing compliance with the emissions cap.

Records shall be maintained indicating any exceedance of units represented firing rates. Should the firing rate of any unit exceed its permit representations (represented contribution to the emission cap), the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap. (8/10)

44. For boilers, heaters, etc., with maximum firing rates less than 40 MMBtu/hr, the fuel flow rate shall be continuously monitored and recorded. The heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling. In addition, H₂S concentrations shall be obtained from the H₂S fuel gas monitoring system. Records, including the flow, quarterly Btu, and H₂S, shall be maintained and used to indicate any exceedance of a unit's represented firing rate(s). Should the firing rate of any unit exceed its permit representations, the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 20

45. For SRUs that handle ammonia acid gas from sour water stripper overheads, the holder of this permit may do either of the following:
- A. The acid gas exiting the waste heat boilers shall be sampled for ammonia on a quarterly basis. When the ammonia concentration exceeds 300 ppmv, the holder of this permit shall implement procedures or actions that are needed to ensure that the sampled ammonia concentration drops below 300 ppmv by the time the next quarterly sample is taken. Drager tubes or another sampling method, as approved by the TCEQ, shall be used to sample for ammonia.
 - B. The holder of this permit shall inspect the sulfur condenser outlets (each sulfur condenser) on each SRU for the presence of ammonia salt formation or buildup. The inspections shall be conducted on an annual basis, and the TCEQ Houston Regional Office shall be informed prior to conducting the inspection (and given the opportunity to observe the sulfur condenser inspection). If ammonia salts are present, the holder of this permit shall implement a monthly ammonia sampling frequency as described in Paragraph A of this condition and the TCEQ Houston Regional Office shall be notified within 30 days.

The sampling results shall be presented in terms of ppmv. The ammonia sampling of the acid gas exiting the SRUs, or inspections of the sulfur condensers for each SRU shall commence no later than May 13, 2006. Records of sampling/inspection time, date, and sampling/inspection results shall be maintained. (2/13)

46. The holder of this permit shall perform sampling and other testing as necessary to establish and demonstrate ongoing compliance with the VOC emission limits, pounds per hour (lb/hr) and tons per year (TPY), from the cooling towers. The cooling tower return water shall be monitored monthly with an approved air stripping system, or approved equivalent, when the cooling towers are in service. The minimum detection level of the testing system shall be equivalent to no more than approximately 5 ppmv. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. The results of the monitoring and maintenance efforts shall be recorded.

If a leak equivalent to more than the ppmv value listed above is detected, the owner or operator shall repair the leak as soon as practical but not later than 45 calendar days after the holder of this permit receives results of monitoring indicating a leak. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as possible. For the purposes of this permit condition, delay of repair means exceeding the 45-day time frame described above. Prior to exceeding the time frame described above, all documentation of a decision to delay repair shall be submitted to the TCEQ Houston Regional Office for review and approval.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 21

Delay of repair on heat exchanger systems for which leaks have been detected is allowed if the equipment is isolated from the process. In addition, delay of repair is also allowed in the following situations:

- A. If repair is technically infeasible without a shutdown, and a shutdown is expected within the next two months.
- B. Delay of repair is also allowed for up to 120 calendar days if necessary parts or personnel were not available.
- C. Delay of repair is also allowed if repair is technically infeasible without a shutdown and the shutdown would cause greater emissions than the potential emissions from delaying repair. The owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair.

47. Carbon Canister Sampling. The carbon adsorption system controlling emissions from APIs 1 and 3 shall consist of a dual carbon system. **(10/10)**

- A. The carbon canisters shall be sampled and recorded, three times per week, to determine breakthrough of VOC for the dual carbon systems controlling the APIs and Lift Stations. The carbon canisters shall be sampled and recorded one time per week, to determine breakthrough of VOC for the dual carbon systems controlling Oil Water Separators (OWS) or Dry Weather Sumps (DWS) on the units in or outside battery limit (OSBL) areas. The sampling point shall be at the outlet of the first carbon bed but before the inlet to the second carbon bed.
- B. Breakthrough shall be defined as a VOC concentration of 100 ppmv as measured as methane. When VOC breakthrough is detected, the waste gas flow shall be directed to a portable dual carbon system while the saturated carbon is replaced with fresh carbon. Sufficient fresh activated carbon shall be maintained at the site such that spent carbon can be replaced as specified.
- C. The method of VOC sampling and analysis shall be by photo-ionization detector (PID), Ultraray, or a TCEQ equivalent as approved by the Regional Office. On each day that sampling is to occur, the analyzer shall be calibrated prior to sampling with a certified gas mixture at 100 ppmv \pm 10 percent.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 22

- D. Records of the carbon canister monitoring maintained at the plant site shall include (but are not limited to) the following:
- (1) Monitoring results;
 - (2) Corrective action taken (including the time and date of that action) when breakthrough occurs; and
 - (3) Process operations at the time that breakthrough occurs. (3/08)

Compliance Assurance Monitoring

48. The following requirements apply to capture systems for the plant flare system and the FCCU 3 scrubber.

- A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.
- B. The control device shall not have a bypass.

or

If there is a bypass for the control device, comply with either of the following requirements:

- (1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or
- (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals that prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, conservation vents on tanks, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 23

least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

- C. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above. (12/11)

Leak Detection and Repair (LDAR) Programs

49. [reserved]

50. [reserved]

51. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - 28VHP (8/10)

Except as may be provided for in the special conditions of this permit, the following requirements apply to all fugitive components at the units authorized under this permit:

- A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68°F or (2) to piping and valves two inches nominal size and smaller or (3) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable ANSI, API, ASME, or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 24

performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the line or valve must have a cap, blind flange, plug, or second valve installed, or the open-ended valve or line shall be monitored for leaks above background within 72 hours. The open-ended valve or line shall be monitored weekly thereafter with an approved gas analyzer and the results recorded. Leakage indicated by readings above background must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a) - (b).

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 25

- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.
 - I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
 - J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
 - K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Paragraphs F through G of this condition.
 - L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations.
52. All process drains shall be instrument-monitored with an approved gas analyzer on an annual basis using a 500 ppmv leak definition. The gas analyzer shall conform to the requirements listed in 40 CFR § 60.485(a)-(b).
53. Ambient H₂S monitors shall be placed through the sulfur recovery, amine regeneration, and sour water stripper areas. These monitors shall be arranged in such a way that coverage is provided for all wind directions. The monitors shall be set to alarm at 10 ppmv and shall

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 26

alarm in the control room. A plot identifying the number and location of each monitor shall be maintained in the control room handling each one of the areas described above.

54. Piping, Valves, Pumps, and Compressors in Ammonia (NH₃), H₂S, and SO₂ Service (10/10)

- A. Audio, olfactory, and visual checks for NH₃, H₂S, and SO₂ leaks within the following operating areas shall be made once per shift (once every 12 hours):

| Pollutant(s) | Operating Area(s) |
|--------------------------------------|--|
| NH ₃ | Aqueous ammonia storage and piping |
| H ₂ S and SO ₂ | SRU, sour water stripper area, amine contactor and regenerator, and hydrotreater areas handling H ₂ S and SO ₂ |

- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall:

- (1) Stop the leak by taking the equipment out of service, or
- (2) Bypass the equipment so that it is no longer in service, or
- (3) Isolate the leak, or
- (4) Commence repair or replacement of the leaking component.

If the leak cannot be repaired within six hours, the holder of this permit shall use clamping procedures to prevent the leak until replacement or repair can be performed.

Records shall be maintained at the plant site of all repairs and replacements made due to leaks. A reminder that visual checks for NH₃, H₂S, and SO₂ leaks need to be made once per shift shall be included in the appropriate unit operator manual no later than September 13, 2005. (8/10)

Emission Cap Compliance Recordkeeping

55. The holder of this permit shall use continuous emissions data, sampling data, firing rates, throughput, fill rates, etc, to perform emission calculations at least once every month in order to verify compliance with the annual (TPY) emission caps. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and TPY emissions caps and individual emission limitations and provide such

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 27

demonstration of compliance to the TCEQ or local air pollution control program representatives upon request.

If any information obtained from parameter monitoring (throughput, pump rates, etc.), sampling data or continuous emission monitor (CEM) data indicates that a facility is exceeding its proposed contribution to the emissions cap (lb/hr and/or TPY), the holder of this permit shall provide adequate information to demonstrate that the lb/hr and/or TPY emissions caps were not exceeded, and that the BACT representations for the facilities contributing to the emissions CAP is being met.

For the time period between July 13, 2005, and July 31, 2005, the facilities contained in this flexible permit will show compliance with their individual emission limitations in accordance with their respective authorization, e.g., permit, exemption, permit-by-rule.

For the time period August 1, 2005 through July 31, 2006, compliance with emissions caps and individual emission limitations will be on an apportioned calendar basis (apportioned meaning that each month is allotted 1/12th of the annual emissions cap or individual emission limitation).

After July 31, 2006, compliance with the annual emission caps and individual emission limitations of this flexible permit shall be based on a rolling 12-month basis. (8/10)

56. Emissions from sources covered under this permit shall be determined as follows. If a source type is not listed below, the permit holder shall use the methodology which was used in the permit application.

Atmospheric Storage Tanks: Emissions for tanks shall be calculated using: (a) AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" and (b) the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks." Short-term emission rate shall be based on the maximum expected pumping rate (fixed-roof) and the higher of the pumping rate or withdrawal rate (IFR and EFR).

Marine Loading: AP-42 Chapter 5.2-4 (Fifth Edition) L_L Equation - The collection efficiency is 100 percent collection (vacuum loading system) for all compounds equal to or greater than 0.5 psia.

Piping Fugitives: Component counts, emission factors, and reduction credits specified in the permit application for the various inspection and maintenance programs.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 28

Boilers and Heaters: CEM information if such a device is installed. The most recent stack test results if a CEM is not installed. If no stack sampling is required, use the proper emission factor for the specific unit and the measured Btu value and flow rate of the fuel.

SRU and FCCU: CEM information. Use the most recent stack test for those compounds which are not subject to CEM requirements. **(10/10)**

Maintenance, Startup, and Shutdown (MSS) Activities

57. This permit authorizes the emissions from the facilities identified in Attachment D for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

- A. The process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
- B. The type of planned MSS activity and the reason for the planned activity;
- C. The common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;
- D. The date and time of the MSS activity and its duration;

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 29

- E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions authorized by this permit shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. (8/10)

- 58. Process units and facilities, with the exception of those identified in Special Condition Nos. 61, 62, 64, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.
 - A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.
 - B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
 - C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.
 - D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 30

verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of Paragraph D(2) of this condition. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) (or equivalent) per the site safety procedures.
 - (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's or P&ID's may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 59. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample locations and collection systems must be located downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.
- E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:
- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 31

- (2) There is not an available connection to a plant control system (flare).
- (3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere per Paragraph E of Special Condition No. 58 must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B. (8/10)

59. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded.
- (2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in Subparagraph (3) of this condition, the concentration measured is at least 20 percent of the maximum range of the tube.
- (2) The tube is used in accordance with the manufacturer's guidelines.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 32

- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) less than release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
- (3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane. **(8/10)**

60. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- A. a cap, blind flange, plug, or second valve must be installed on the line or valve; or

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 33

- B. the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once at the end of the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings 20 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. (8/10)
61. This permit authorizes emissions from the storage tanks identified in Attachment D during planned floating roof landings. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Emissions from change of service tank landings shall not exceed 10 tons of VOC in any rolling 12-month period. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the ECIELT. The following requirements apply to tank roof landings.
- A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.
 - B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:
 - (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 34

other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

- (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.
 - (3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition No. 59.
 - (4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.
 - (5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.
- C. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in Paragraph D of this condition is satisfied.
- (1) Minimize air circulation in the tank vapor space.
 - a. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
 - b. Access points shall be closed when not in use.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 35

- (2) Minimize time and VOC partial pressure.
 - a. The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psi as documented by the method specified in Paragraph D(1) of this condition;
 - b. Blowers may be used to move air through the tank without emission control at a rate not to exceed 12,000 cubic feet per minute for no more than 12 hours. All standing liquid shall be removed from the tank during this period; and
 - c. Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.
- D. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.
 - (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
 - (2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:
 - a. Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A Appendix 1.
 - b. Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 36

- c. Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1,000 ppmv through the procedure in Special Condition No. 59.

- (3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

- E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:
 - (1) Only one benzene tank with a landed floating roof can be filled at any time at a rate not to exceed 1,000 bbl/hr.
 - (2) The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.
- F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:
 - (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
 - (2) the reason for the tank roof landing;
 - (3) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:
 - a. the roof was initially landed,
 - b. all liquid was pumped from the tank to the extent practical,
 - c. start and completion of controlled degassing, and total volumetric flow,

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 37

- d. all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,
 - e. if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,
 - f. refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and
 - g. tank roof off supporting legs, floating on liquid.
- (4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application, PI-1, submitted January 5, 2007.
(8/10)
- 62. Storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. This shall be verified and documented through one of the criteria identified in Paragraph C of Special Condition No. 61. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC partial pressure greater than 0.02 psi vapor as necessary to set up for degassing and cleaning. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of Subparagraphs B(1) through B(5) of Special Condition No. 61 and records maintained per Subparagraphs E(3)c through E(3)e, and E(4) of Special Condition No. 61. Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia. (8/10)
- 63. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:
 - A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.
 - B. Equip fill line intake with a "duckbill" or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 38

- C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.
- (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.
 - (2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.
 - (3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by Special Condition No. 67, measured using an instrument meeting the requirements of Special Condition No. 59.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
- D. The permit holder shall determine the vacuum truck emissions each month using the vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.
- E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Paragraphs A through D of this condition do not apply. (8/10)
64. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 39

- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
 - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.
 - C. These requirements do not apply to vessels storing less than 100 gallons of liquid that are closed such that the vessel does not vent to atmosphere.
 - D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
 - E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application. (8/10)
65. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. (8/10)
66. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment D during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.
- A. Combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in special conditions in other NSR permits during planned startup and shutdown if the following criteria are satisfied.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 40

- (1) The maximum allowable emission rates in the permit authorizing the facility are not exceeded.
- (2) The startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.
- (3) Control devices are started and operating properly when venting a waste gas stream.

- B. The limits identified below apply to the operations of the specified facilities during startup and shutdown.

During periods of startup of FCCU-3, the CO emissions are not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmv at 3 percent O₂ on a rolling 24-hour average basis. A CO continuous emission monitor must be properly operated and maintained. The emissions during startup can average 1,500 ppmv at 3 percent O₂ on a rolling 24-hour average basis for up to two days.

- C. FCCU-3 is authorized to operate in hot standby mode for up to 336 hours per event as necessary to accommodate planned maintenance and repair of components associated with the unit. Torch oil combustion emissions through the wet scrubber control for EPN 34 shall be continuously monitored as required for normal operation and start up and shutdown, but the emissions shall be accounted and show compliance hourly and 12 month rolling in the Planned MSS Emissions Cap. During these periods of hot standby the CO is not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmvd at 3 percent O₂ on a rolling 24-hour average basis. The vent emission shall not exceed a 1,500 ppmvd at 3 percent O₂ on a rolling 24-hour average basis during hot standby mode.

- D. A record shall be maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each have been satisfied.

(4/13)

67. Additional or temporary control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device. (4/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 41

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS). (12/11)

- (1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.
- (2) The CAS shall be sampled down stream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:
 - a. CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.
 - b. Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.
 - c. The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.
- (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59.
- (4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 42

canisters are switched. Sufficient new activated carbon shall be maintained at the site to replace spent carbon such that replacements can be done in the above specified time frame.

- (5) Records of CAS monitoring shall include the following:
 - a. Sample time and date.
 - b. Monitoring results (ppmv).
 - c. Canister replacement log.
- (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.
- (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer

- (1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1,250°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

The thermal oxidizer combustion chamber exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 43

- (2) As an alternative to Paragraph B(1) of this condition, the thermal oxidizer may be tested to confirm a minimum of 99 weight percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. A stack test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable EPA Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer and a summary of the testing results shall be included with the emission calculations.
- (3) As an alternative to Paragraphs B(1) and B(2) of this condition, the thermal oxidizer may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained in accordance with Special Conditions No. 59, except Paragraph C of Special Condition No. 59. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations shall be measured and inlet and outlet VOC mass rates shall be calculated on an hourly basis to confirm minimum 99 weight percents destruction efficiency or an exhaust concentration no greater than 20 ppmv.

C. Internal Combustion Engine.

- (1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.
- (2) The engine must have been stack tested with butane or propane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition No. 59 are also acceptable for this documentation.

The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 44

the requirements of Special Condition No. 59.A. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

- (3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. Flares

- (1) The heating value and velocity requirements in 40 CFR § 60.18 shall be satisfied during operations authorized by this permit.
- (2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- (3) The permit holder shall either demonstrate 40 CFR § 60.18 BTU requirements are met during the MSS flaring activity using engineering calculations or install a continuous flow monitor and either a composition analyzer that provides a record of the vent stream flow and total VOC content to the flare or a calorimeter that provides a record of the Btu content of the vent stream flow to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition or BTU content shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ± 5.0 percent, temperature

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 45

monitor shall be ± 2.0 percent at absolute temperature, and pressure monitor shall be ± 5.0 mm Hg;

If a total VOC analyzer is installed, calibration of the composition analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

If a calorimeter is installed, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes. If a total VOC analyzer is installed, hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated January 5, 2007. (8/10)

- E. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.
- (1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.
 - (2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59A.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 46

- (3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.
- F. A closed loop refrigerated vapor recovery system
 - (1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).
 - (2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition No. 59.
 - (3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.
68. With the exception of the ECIELT emission limits, Special Condition Nos. 57 through 67 become effective 180 days after the permit amendment received by the TCEQ on January 5, 2007, has been approved. During this period, monitoring and recordkeeping shall satisfy the requirements of Paragraphs A through D of Special Condition No. 57. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. The permit holder may maintain abbreviated records of emissions from Attachment A and B activities as allowed in Special Condition No. 57 rather than documenting all the information required by Paragraphs A through D of Special Condition No. 57.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 47

Other Requirements

69. The FCCU1 project authorized by the alteration application, dated October 14, 2010, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 33.98 | 68.08 | 139.69 | 312.56 | 17.64 |
| 80 | B501 Furnace | 46052 | 4.33 | 3.24 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.80 | 7.54 | 2.23 | 1.02 | 1.61 |
| 384 | SRU C&D Incin | 47256 | 52.68 | 30.89 | 0.00 | 115.19 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 43.08 | 72.46 | 154.55 | 251.82 | 22.36 |
| 80 | B501 Furnace | 46052 | 4.34 | 3.25 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.81 | 7.66 | 2.26 | 1.03 | 1.64 |
| 384 | SRU C&D Incin | 47256 | 52.69 | 30.89 | 0.00 | 115.20 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

70. The FCCU3 project authorized by the amendment application, dated April 26, 2011, was determined not to be subject to major new source review for CO, NO_x, PM/PM₁₀/PM_{2.5}, SO₂, or VOC by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 48

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 851.73 | 173.86 | 289.77 | 199.94 | 38.61 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.44 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.86 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.26 | 26.19 | | 366.62 | 2.14 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 499.23 | 109.33 | 299.67 | 190.29 | 33.98 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.45 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.87 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.29 | 26.19 | | 366.65 | 2.14 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).

(12/11)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 49

71. The Tank 117 throughput increase project associated with the permit amendment application, PI-1 dated October 22, 2012, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities modified or potentially affected by the project. Actual emissions from tank 117 shall be monitored, recorded, and reports made in accordance with 30 TAC §116.127 for the time period specified in 30 TAC §116.127(b) (1). The projected actual rate for tank 117 is 1.55 tpy VOC. (2/13)

Dated October 22, 2013

ATTACHMENT A

Flexible Permit Numbers 47256 and PSDTX402M3

Inherently Low Emitting Activities

| Activity | Emissions | | | | |
|--|-----------|-----------------|----|-----------------|------------------|
| | VOC | NO _x | CO | SO ₂ | H ₂ S |
| Analyzer calibration | X | X | X | X | X |
| Analyzer filter changeouts | X | | | | X |
| Carbon canister replacement | X | | | | |
| Equipment Lubrication (WD-40, etc.) | X | | | | |
| Injection quill repairs / replacement | X | | | | |
| Instrumentation repairs / replacement | X | | | | |
| Meter proving | X | | | | |
| Process Sampling | X | | | | X |
| Sight glass or level instrument maintenance / repair / replacement | X | | | | X |
| Solvent cleaning of fixed, immovable objects | X | | | | |

Dated December 13, 2011

ATTACHMENT B

Flexible Permit Numbers 47256 and PSDTX402M3

Routine Maintenance Activities

Planned MSS activities performed with work orders where the isolated system volume is less than 30 cubic feet. These include activities such as:

- Pump repair/replacement
- Fugitive component (valve, pipe, flange) repair/replacement
- Compressor repair/replacement
- Heat exchanger repair/replacement
- Vessel repair/replacement

Dated December 13, 2011

ATTACHMENT C

Flexible Permit Numbers 47256 and PSDTX402M3

MSS Activity Summary

| Facilities | Description | Emissions Activity | EPN or Group |
|-------------------------------------|--|---|-------------------------------------|
| all process units | process unit shutdown/depressurize/drain | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units | process unit purge/degas/drain | vent to atmosphere | F-1000 |
| all process units | process unit startup | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| FCCU-3 | hot standby to allow ancillary equipment repair / replacement. | Torch oil firing in the regenerator to maintain temperature | 34 |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | recovery from facility / component repair / replacement | vent to flare | Flares and Incinerators |
| all process units and storage tanks | recovery from facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | preparation for unit turnaround or facility/component repair/replacement | remove liquid | F-1000 |
| all floating roof storage tanks | tank roof landing | operation with landed roof | F-1000 |
| all floating roof storage tanks | degas of tank with landed roof | vent to control device | 311, 321, 331, 400, TEMP1 and TEMP2 |
| all storage tanks | tank cleaning | cleaning activity and solvents | F-1000 |
| see Attachment A | miscellaneous low emitting activities | see Attachment A | F-1000 |

Dated April 15, 2013

ATTACHMENT D

Flexible Permit Number 47256 and PSDTX402M3

Facility List

This permit authorizes emissions from the following temporary facilities used to support planned maintenance, startup, and shutdown (MSS) activities at permanent site facilities: frac tanks, containers, vacuum trucks, portable control devices identified in Special Condition No. 67 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

This permit authorizes MSS emissions from the permanent site facilities identified below. The headings for each group of facilities (Process Units, Tanks, etc) are used in the MSS Activity Summary to identify all facilities in the respective group.

| Process Units | | |
|----------------------------------|--------------|------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Alkylate 3 Debutanizer Unit | ALKY3DB | 20850 |
| Alkylation Unit No. 2 | ALKY2 | 47256/PSDTX402M3 |
| Alkylation Unit no. 3 | ALKY3 | 9606 |
| Aromatics Recovery Unit | ARU | 2231 |
| Aromatics Unit 2 | AU2 | 2612 |
| Cat Feed Hydrotreater Unit | CFHU | 47256/PSDTX402M3 |
| Coker Residuum Preheat System | N/A | 6592 |
| Coking Complex | Coker | 2315 |
| Distillate Desulphurization Unit | DDU | 47256/PSDTX402M3 |
| Distillate Ultrafiner Facility | N/A | 47256/PSDTX402M3 |
| Docks | Docks | 47256/PSDTX402M3 |
| Environmental Facility | ENVF | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 1 | FCCU1 | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 3 | FCCU3 | 47256/PSDTX402M3 |
| Hydrocarbon Tank 537 | N/A | 1940 |
| Hydrogen Recovery Unit | HRU | 47256/PSDTX402M3 |
| Naphtha Desulphurization Unit | NDU | 46052 |
| Pipestills 3A and 3B | PS3A/B | 19599 |
| Power Station No. 2 | PWRS2 | 47256/PSDTX402M3 |
| Raffinate Splitter Tower | N/A | 47256/PSDTX402M3 |
| Resid Deasphalting Unit | RDU | 47256/PSDTX402M3 |
| Resid Hydrotreating Unit | RHU | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| Process Units | | |
|---------------------------|---------------|---------------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Sulfur Recovery Unit | SRU | 47256/PSDTX402M3 |
| Tank Farm | OMCC | 2231 and 47256/PSDTX402M3 |
| Ultracracker Unit | ULC ancillary | 2609 |
| Ultraformer Unit No. 3 | UU3 | 47256/PSDTX402M3 |
| Ultraformer Unit No. 4 | UU4 | 6488 |
| Wastewater Treatment Unit | WWTP | 22107 |

| Flares, Incinerators and other Control | | |
|--|--------|------------------|
| Flare or Incinerator Number | EPN | NSR Permit No. |
| Refinery Flare No. 2 | 311 | 47256/PSDTX402M3 |
| Refinery Flare No. 3 | 321 | 47256/PSDTX402M3 |
| Refinery Flare No. 4 | 331 | 47256/PSDTX402M3 |
| ULC Flare | 351A | 47256/PSDTX402M3 |
| SRU A/B Flare | 381 | 47256/PSDTX402M3 |
| SRU C/D Flare | 383 | 47256/PSDTX402M3 |
| SRU Incinerator C and D | 384 | 47256/PSDTX402M3 |
| DDU Flare | 396A | 47256/PSDTX402M3 |
| Flare 8 | 400 | 47256/PSDTX402M3 |
| CFHU Flare 1 | 501 | 47256/PSDTX402M3 |
| SRU Sour Water System Flare | FLR-SW | 47256/PSDTX402M3 |
| Ground Flare #5 | TCH-5 | 15497 |
| Flare 6 | 530 | 9606 |
| AU2 Flare | 611 | 2612 |
| Temporary Control Device No. 1 | TEMP1 | 47256/PSDTX402M3 |
| Temporary Control Device No. 2 | TEMP2 | 47256/PSDTX402M3 |
| FCCU-3 Regenerator Scrubber | 34 | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|--------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 4 | 280-4 | 47256/PSDTX402M3 |
| Tank 5 | 280-5 | 47256/PSDTX402M3 |
| Tank 7 | 280-7 | 47256/PSDTX402M3 |
| Tank 8 | 280-8 | 2231 |
| Tank 9 | 280-9 | 2231 |
| Tank 10 | 280-10 | 2231 |
| Tank 11 | 280-11 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| Storage Tanks | | |
|---------------|---------|---------------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 12 | 280-12 | 47256/PSDTX402M3 |
| Tank 13 | 280-13 | 47256/PSDTX402M3 |
| Tank 13A | 280-13A | 47256/PSDTX402M3 |
| Tank 14 | 280-14 | 47256/PSDTX402M3 |
| Tank 14A | 280-14A | 47256/PSDTX402M3 |
| Tank 16 | 280-16 | 47256/PSDTX402M3 |
| Tank 17 | 280-17 | 47256/PSDTX402M3 |
| Tank 18 | 280-18 | 47256/PSDTX402M3 |
| Tank 19 | 280-19 | 2231 |
| Tank 20 | 280-20 | 2231 |
| Tank 22 | 280-22 | 47256/PSDTX402M3 |
| Tank 23 | 280-23 | 47256/PSDTX402M3 |
| Tank 24 | 280-24 | 47256/PSDTX402M3 |
| Tank 25 | 280-25 | 47256/PSDTX402M3 |
| Tank 26 | 280-26 | 47256/PSDTX402M3 |
| Tank 27 | 280-27 | 47256/PSDTX402M3 |
| Tank 28 | 280-28 | 2231 |
| Tank 29 | 280-29 | 2231 |
| Tank 30 | 280-30 | 2231 |
| Tank 31 | 280-31 | 47256/PSDTX402M3 |
| Tank 32 | 280-32 | 47256/PSDTX402M3 |
| Tank 34 | 280-34 | 47256/PSDTX402M3 |
| Tank 36 | 280-36 | 2231 |
| Tank 37 | 280-37 | 2231 and 47256/PSDTX402M3 |
| Tank 38 | 280-38 | 2231 and 47256/PSDTX402M3 |
| Tank 39 | 280-39 | 2231 |
| Tank 41 | 280-41 | 47256/PSDTX402M3 |
| Tank 42 | 280-42 | 47256/PSDTX402M3 |
| Tank 43 | 280-43 | 47256/PSDTX402M3 |
| Tank 43A | 280-43A | 47256/PSDTX402M3 |
| Tank 44 | 280-44 | 47256/PSDTX402M3 |
| Tank 45 | 280-45 | 47256/PSDTX402M3 |
| Tank 46 | 280-46 | 47256/PSDTX402M3 |
| Tank 47 | 280-47 | 47256/PSDTX402M3 |
| Tank 48 | 280-48 | 47256/PSDTX402M3 |
| Tank 48A | 280-48A | 47256/PSDTX402M3 |
| Tank 49 | 280-49 | 47256/PSDTX402M3 |
| Tank 50 | 280-50 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 51 | 280-51 | 47256/PSDTX402M3 |
| Tank 52 | 280-52 | 47256/PSDTX402M3 |
| Tank 53 | 280-53 | 47256/PSDTX402M3 |
| Tank 54 | 280-54 | 47256/PSDTX402M3 |
| Tank 55 | 280-55 | 47256/PSDTX402M3 |
| Tank 56 | 280-56 | 47256/PSDTX402M3 |
| Tank 57 | 280-57 | 47256/PSDTX402M3 |
| Tank 59 | 280-59 | 47256/PSDTX402M3 |
| Tank 60 | 280-60 | 47256/PSDTX402M3 |
| Tank 60A | 280-60A | 47256/PSDTX402M3 |
| Tank 61 | 280-61 | 47256/PSDTX402M3 |
| Tank 63 | 280-63 | 47256/PSDTX402M3 |
| Tank 64 | 280-64 | 47256/PSDTX402M3 |
| Tank 65 | 280-65 | 47256/PSDTX402M3 |
| Tank 66 | 280-66 | 47256/PSDTX402M3 |
| Tank 67 | 280-67 | 47256/PSDTX402M3 |
| Tank 71 | 280-71 | 47256/PSDTX402M3 |
| Tank 72 | 280-72 | 47256/PSDTX402M3 |
| Tank 73 | 280-73 | 47256/PSDTX402M3 |
| Tank 73A | 280-73A | 47256/PSDTX402M3 |
| Tank 80 | 280-80 | 47256/PSDTX402M3 |
| Tank 90 | 280-90 | 47256/PSDTX402M3 |
| Tank 91 | 280-91 | 47256/PSDTX402M3 |
| Tank 92 | 280-92 | 47256/PSDTX402M3 |
| Tank 93 | 280-93 | 47256/PSDTX402M3 |
| Tank 94 | 280-94 | 47256/PSDTX402M3 |
| Tank 95 | 280-95 | 47256/PSDTX402M3 |
| Tank 97 | 280-97 | 47256/PSDTX402M3 |
| Tank 98 | 280-98 | 47256/PSDTX402M3 |
| Tank 100 | 280-100 | 47256/PSDTX402M3 |
| Tank 101 | 280-101 | 2231 |
| Tank 102 | 280-102 | 2231 |
| Tank 103 | 280-103 | 47256/PSDTX402M3 |
| Tank 103A | 280-103A | 47256/PSDTX402M3 |
| Tank 104 | 280-104 | 47256/PSDTX402M3 |
| Tank 105 | 280-105 | 47256/PSDTX402M3 |
| Tank 106 | 280-106 | 47256/PSDTX402M3 |
| Tank 107 | 280-107 | 2231 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 108A | 280-108A | 2231 |
| Tank 110 | 280-110 | 47256/PSDTX402M3 |
| Tank 111 | 280-111 | 2231 |
| Tank 112 | 280-112 | 2231 |
| Tank 113 | 280-113 | 2231 |
| Tank 114 | 280-114 | 2231 |
| Tank 115 | 280-115 | 2231 |
| Tank 116 | 280-116 | 2231 |
| Tank 117 | 280-117 | 47256/PSDTX402M3 |
| Tank 117A | 280-117A | 47256/PSDTX402M3 |
| Tank 118 | 280-118 | 47256/PSDTX402M3 |
| Tank 127 | 280-127 | 47256/PSDTX402M3 |
| Tank 128 | 280-128 | 47256/PSDTX402M3 |
| Tank 129 | 280-129 | 47256/PSDTX402M3 |
| Tank 130 | 280-130 | 47256/PSDTX402M3 |
| Tank 131 | 280-131 | 47256/PSDTX402M3 |
| Tank 140 | 280-140 | 47256/PSDTX402M3 |
| Tank 181 | 280-181 | 47256/PSDTX402M3 |
| Tank 183 | 280-183 | 2231 |
| Tank 184 | 280-184 | 2231 |
| Tank 185 | 280-185 | 2231 |
| Tank 186 | 280-186 | 2231 |
| Tank 187 | 280-187 | 2231 |
| Tank 188 | 280-188 | 2231 |
| Tank 269 | 280-269 | 47256/PSDTX402M3 |
| Tank 269A | 280-269A | 47256/PSDTX402M3 |
| Tank 270 | 280-270 | 47256/PSDTX402M3 |
| Tank 295 | 280-295 | 47256/PSDTX402M3 |
| Tank 296 | 280-296 | 47256/PSDTX402M3 |
| Tank 297 | 280-297 | 47256/PSDTX402M3 |
| Tank 298 | 280-298 | 47256/PSDTX402M3 |
| Tank 501 | 280-501 | 47256/PSDTX402M3 |
| Tank 502 | 280-502 | 47256/PSDTX402M3 |
| Tank 503 | 280-503 | 47256/PSDTX402M3 |
| Tank 504 | 280-504 | 47256/PSDTX402M3 |
| Tank 520 | 280-520 | 2231 |
| Tank 528 | 280-528 | 47256/PSDTX402M3 |
| Tank 529 | 280-529 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| Storage Tanks | | |
|---------------|-----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 530 | 280-530 | 47256/PSDTX402M3 |
| Tank 531 | 280-531 | 47256/PSDTX402M3 |
| Tank 532 | 280-532 | 2231 |
| Tank 533 | 280-533 | 2231 |
| Tank 534 | 280-534 | 2231 |
| Tank 535 | 280-535 | 2231 |
| Tank 536 | 280-536 | 47256/PSDTX402M3 |
| Tank 537 | 280-537 | 1940 |
| Tank 538 | 280-538 | 2231 |
| Tank 560 | 280-560 | 47256/PSDTX402M3 |
| Tank 561 | 280-561 | 47256/PSDTX402M3 |
| Tank 608-F | 108-608 | 2231 |
| Tank 609-F | 108-609 | 2231 |
| Tank 652 | 280-652 | 47256/PSDTX402M3 |
| Tank 653 | 280-653 | 47256/PSDTX402M3 |
| Tank 1004 | 280-1004 | 47256/PSDTX402M3 |
| Tank 1004A | 280-1004A | 47256/PSDTX402M3 |
| Tank 1011 | 76 | 6592 |
| Tank 1012 | 480-1012 | 47256/PSDTX402M3 |
| Tank 1013 | 480-1013 | 47256/PSDTX402M3 |
| Tank 1018 | 280-1018 | 47256/PSDTX402M3 |
| Tank 1020 | 280-1020 | 47256/PSDTX402M3 |
| Tank 1021 | 280-1021 | 47256/PSDTX402M3 |
| Tank 1023 | 280-1023 | 47256/PSDTX402M3 |
| Tank 1024 | 280-1024 | 47256/PSDTX402M3 |
| Tank 1025 | 280-1025 | 47256/PSDTX402M3 |
| Tank 1039 | 280-1039 | 47256/PSDTX402M3 |
| Tank 1041 | 280-1041 | 2231 |
| Tank 1042 | 280-1042 | 2231 |
| Tank 1044 | 280-1044 | 2231 |
| Tank 1045 | 280-1045 | 47256/PSDTX402M3 |
| Tank 1046 | 280-1046 | 47256/PSDTX402M3 |
| Tank 1047 | 280-1047 | 47256/PSDTX402M3 |
| Tank 1048 | 280-1048 | 47256/PSDTX402M3 |
| Tank 1051 | 280-1051 | 47256/PSDTX402M3 |
| Tank 1052 | 280-1052 | 4714 |
| Tank 1053 | 280-1053 | 4714 |
| Tank 1055 | 280-1055 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 3010 | 280-3010 | 47256/PSDTX402M3 |
| Tank 4000 | 280-4000 | 47256/PSDTX402M3 |
| Tank 4011 | 280-4011 | 47256/PSDTX402M3 |
| Tank 4016 | 280-4016 | 47256/PSDTX402M3 |

Dated April 15, 2013

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Emission Points included in Normal Operation Emission Caps

This table indicates the emission caps which normal operations emissions from an emission point are included in.

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 33 | FCCU 3 404B Heater | X | X | X | X | | X | | |
| 34 | FCCU No. 3 (1) | X | X | X | X | | X | | |
| 61 | FCCU 2 BA201 Heater | X | X | X | X | | X | | |
| 78 | Coker Feed Preheater B302 | X | X | X | X | | X | | |
| 93 | FCCU No. 1 | X | X | X | X | | X | | X |
| 161 | 301-B Reheat Heaters | X | X | X | X | | X | | |
| 162 | 302-B Reheat Heaters | X | X | X | X | | X | | |
| 164 | UU3 304-B Regeneration Flue Gas Heater | X | X | X | X | | X | | |
| 165 | UU3 305-B Hot Oil Heater | X | X | X | X | | X | | |
| 167 | UU3 306-B Preheat Heater | X | X | X | X | | X | | |
| 168 | 307-A/B Desulfurizer Heater | X | X | X | X | | X | | |
| 169 | UU3 308-B Process Heater | X | X | X | X | | X | | |
| 195-F | HUF Fugitives | X | | | | | | X | |
| 201 | ULC 100B Heater | X | X | X | X | | X | | |
| 202 | ULC 101B Heater | X | X | X | X | | X | | |
| 203 | ULC 102B Heater (2) | X | X | X | X | | X | | |
| 204 | ULC 103B Heater | X | X | X | X | | X | | |
| 205 | ULC 104BA Heater (2) | X | X | X | X | | X | | |
| 205 | ULC 104BB Heater (2) | X | X | X | X | | X | | |
| 206 | ULC 105BA Heater | X | X | X | X | | X | | |
| 206 | ULC 105BB Heater | X | X | X | X | | X | | |
| 280-4 | Tank 4 | X | | | | | | X | |
| 280-5 | Tank 5 | X | | | | | | X | |
| 280-11 | Tank 11 | X | | | | | | X | |
| 280-12 | Tank 12 | X | | | | | | X | |
| 280-13 | Tank 13 | X | | | | | | X | |
| 280-13A | Tank 13A | X | | | | | | X | |
| 280-14 | Tank 14 | X | | | | | | X | |
| 280-14A | Tank 14A | X | | | | | | X | |
| 280-16 | Tank 16 | X | | | | | | X | |
| 280-17 | Tank 17 | X | | | | | | X | |
| 280-18 | Tank 18 | X | | | | | | X | |
| 280-22 | Tank 22 | X | | | | | | X | |
| 280-23 | Tank 23 | X | | | | | | X | |
| 280-24 | Tank 24 | X | | | | | | X | |
| 280-25 | Tank 25 | X | | | | | | X | |
| 280-26 | Tank 26 | X | | | | | | X | |
| 280-27 | Tank 27 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-31 | Tank 31 | X | | | | | | X | |
| 280-32 | Tank 32 | X | | | | | | X | |
| 280-34 | Tank 34 | X | | | | | | X | |
| 280-37 | Tank 37 | X | | | | | | X | |
| 280-38 | Tank 38 | X | | | | | | X | |
| 280-41 | Tank 41 | X | | | | | | X | |
| 280-42 | Tank 42 | X | | | | | | X | |
| 280-43 | Tank 43 | X | | | | | | X | |
| 280-43A | Tank 43A | X | | | | | | X | |
| 280-44 | Tank 44 | X | | | | | | X | |
| 280-45 | Tank 45 | X | | | | | | X | |
| 280-46 | Tank 46 | X | | | | | | X | |
| 280-47 | Tank 47 | X | | | | | | X | |
| 280-48 | Tank 48 | X | | | | | | X | |
| 280-48A | Tank 48A | X | | | | | | X | |
| 280-49 | Tank 49 | X | | | | | | X | |
| 280-50 | Tank 50 | X | | | | | | X | |
| 280-51 | Tank 51 | X | | | | | | X | |
| 280-52 | Tank 52 | X | | | | | | X | |
| 280-53 | Tank 53 | X | | | | | | X | |
| 280-54 | Tank 54 | X | | | | | | X | |
| 280-55 | Tank 55 | X | | | | | | X | |
| 280-56 | Tank 56 | X | | | | | | X | |
| 280-57 | Tank 57 | X | | | | | | X | |
| 280-59 | Tank 59 | X | | | | | | X | |
| 280-60 | Tank 60 | X | | | | | | X | |
| 280-60A | Tank 60A | X | | | | | | X | |
| 280-61 | Tank 61 | X | | | | | | X | |
| 280-63 | Tank 63 | X | | | | | | X | |
| 280-64 | Tank 64 | X | | | | | | X | |
| 280-65 | Tank 65 | X | | | | | | X | |
| 280-66 | Tank 66 | X | | | | | | X | |
| 280-67 | Tank 67 | X | | | | | | X | |
| 280-71 | Tank 71 | X | | | | | | X | |
| 280-72 | Tank 72 | X | | | | | | X | |
| 280-73 | Tank 73 | X | | | | | | X | |
| 280-73A | Tank 73A | X | | | | | | X | |
| 280-80 | Tank 80 | X | | | | | | X | |
| 280-90 | Tank 90 | X | | | | | | X | |
| 280-91 | Tank 91 | X | | | | | | X | |
| 280-92 | Tank 92 | X | | | | | | X | |
| 280-93 | Tank 93 | X | | | | | | X | |
| 280-94 | Tank 94 | X | | | | | | X | |
| 280-95 | Tank 95 | X | | | | | | X | |
| 280-97 | Tank 97 | X | | | | | | X | |
| 280-98 | Tank 98 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|-----------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-100 | Tank 100 | X | | | | X | | | X |
| 280-103 | Tank 103 | X | | | | | | X | |
| 280-103A | Tank 103A | X | | | | | | X | |
| 280-104 | Tank 104 | X | | | | | | X | |
| 280-105 | Tank 105 | X | | | | | | X | |
| 280-106 | Tank 106 | X | | | | | | X | |
| 280-110 | Tank 110 | X | | | | | | X | |
| 280-117 | Tank 117 | X | | | | | | X | |
| 280-117A | Tank 117A | X | | | | | | X | |
| 280-118 | Tank 118 | X | | | | | | X | |
| 280-127 | Tank 127 | X | | | | | | X | |
| 280-128 | Tank 128 | X | | | | | | X | |
| 280-129 | Tank 129 | X | | | | | | X | |
| 280-130 | Tank 130 | X | | | | | | X | |
| 280-131 | Tank 131 | X | | | | | | X | |
| 280-140 | Tank 140 | X | | | | | | X | |
| 280-181 | Tank 181 | X | | | | | | X | |
| 280-269 | Tank 269 | X | | | | | | X | |
| 280-269A | Tank 269A | X | | | | | | X | |
| 280-270 | Tank 270 | X | | | | | | X | |
| 280-295 | Tank 295 | X | | | | | | X | |
| 280-296 | Tank 296 | X | | | | | | X | |
| 280-297 | Tank 297 | X | | | | | | X | |
| 280-298 | Tank 298 | X | | | | | | X | |
| 280-501 | Tank 501 | X | | | | | | X | |
| 280-502 | Tank 502 | X | | | | | | X | |
| 280-503 | Tank 503 | X | | | | | | X | |
| 280-504 | Tank 504 | X | | | | | | X | |
| 280-528 | Tank 528 | X | | | | | | X | |
| 280-529 | Tank 529 | X | | | | | | X | |
| 280-530 | Tank 530 | X | | | | | | X | |
| 280-531 | Tank 531 | X | | | | | | X | |
| 280-536 | Tank 536 | X | | | | | | X | |
| 280-560 | Tank 560 | X | | | | | | X | |
| 280-561 | Tank 561 | X | | | | | | X | |
| 280-652 | Tank 652 | X | | | | | | X | |
| 280-653 | Tank 653 | X | | | | | | X | |
| 280-1004 | Tank 1004 | X | | | | | | X | |
| 280-1004A | Tank 1004A | X | | | | | | X | |
| 280-1018 | Tank 1018 | X | | | | | | X | |
| 280-1020 | Tank 1020 | X | | | | | | X | |
| 280-1021 | Tank 1021 | X | | | | | | X | |
| 280-1023 | Tank 1023 | X | | | | | | X | X |
| 280-1024 | Tank 1024 | X | | | | | | X | |
| 280-1025 | Tank 1025 | X | | | | | | X | |
| 280-1039 | Tank 1039 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-1045 | Tank 1045 | X | | | | | | X | |
| 280-1046 | Tank 1046 | X | | | | | | X | |
| 280-1047 | Tank 1047 | X | | | | | | X | |
| 280-1048 | Tank 1048 | X | | | | | | X | |
| 280-1051 | Tank 1051 | X | | | | | | X | X |
| 280-1055 | Tank 1055 | X | | | | | | X | |
| 280-3010 | Tank 3010 | X | | | | | | X | |
| 280-4000 | Tank 4000 | X | | | | | | X | |
| 280-4011 | Tank 4011 | X | | | | | | X | |
| 280-4016 | Tank 4016 | X | | | | | | X | |
| 294-1 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-2 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-3 | Thermal Oxidizer | X | X | X | X | | | X | |
| 299-32 | Marine Dock | X | | | | | | X | |
| 299-33 | Marine Docks | X | | | | | | X | |
| 299-34 | Marine Docks | X | | | | | | X | |
| 299-37 | Marine Docks | X | | | | | | X | |
| 299-38 | Marine Docks | X | | | | | | X | |
| 311 | Refinery Flare No. 2 | X | X | X | X | X | | X | X |
| 321 | Refinery Flare No. 3 | X | X | X | X | X | | X | X |
| 331 | Refinery Flare No. 4 | X | X | X | X | X | | X | X |
| 351A | ULC Flare | X | X | X | X | X | | X | X |
| 381 | SRU A/B Flare | X | X | X | X | X | | X | X |
| 383 | SRU C/D Flare | X | X | X | X | X | | X | X |
| 384 | SRU Incinerator C and D | X | X | X | X | | X | | |
| 391 | DDU B-101/102 Heaters | X | X | X | X | | X | | |
| 392 | DDU B-201/202 Heaters | X | X | X | X | | X | | |
| 394 | DDU B-301 Heater | X | X | X | X | | X | | |
| 395 | DDU B-302 Reboiler | X | X | X | X | | X | | |
| 396A | DDU Flare | X | X | X | X | X | | X | X |
| 400 | Flare 8 | X | X | X | X | X | | X | X |
| 411 | Alky 2 Cooling Tower | X | | | | | X | | |
| 412 | Coker Cooling Tower | X | | | | | X | | |
| 413 | FCCU 1 Cooling Tower | X | | | | | X | | |
| 415 | FCCU 3 Cooling Tower | X | | | | | X | | |
| 416 | Power 3 Cooling Tower | X | | | | | X | | |
| 418 | ULC Cooling Tower | X | | | | | X | | |
| 419 | NDU Cooling Tower | X | | | | | X | | |
| 421 | UU3 Cooling Tower | X | | | | | X | | |
| 426 | CFHU Cooling Tower | X | | | | | X | | |
| 453 | Oil/Water Separator | X | | | | | | X | |
| 454 | Oil/Water Separator | X | | | | | | X | |
| 471 | CFHU Heaters 101-B and 102-B | X | X | X | X | | X | | |
| 480-1012 | Tank 1012 | X | | | | | | X | |
| 480-1013 | Tank 1013 | X | | | | | | X | |
| 481 | RHU Heaters Train 200 | X | X | X | X | | X | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 482 | RHU Heaters Train 300 | X | X | X | X | | X | | |
| 483 | RHU Heaters Train 400 | X | X | X | X | | X | | |
| 484 | RHU Fractionation Heaters | X | X | X | X | | X | | |
| 485 | RHU VRS Hot Oil Heater | X | X | X | X | | X | | |
| 501 | CFHU Flare 1 | X | X | X | X | X | | X | X |
| 550 | RDU Heater | X | X | X | X | | X | | |
| 551 | RDU Fugitives | X | | | | | | X | |
| E-02/03 | FCCU1 Waste Water Vent 3 | X | | | | | | X | |
| E-06 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-08 | Oil/Water Separator - FCCU 2 Unit | X | | | | | | X | |
| E-13 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-14 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-16 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-34 | Oil/Water Separator - RDU Unit | X | | | | | | X | |
| E-35 | Oil/Water Separator - CFHU Unit | X | | | | | | X | |
| E-48 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-63 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-68 | Lab Wastewater Collection Sump | X | | | | | | X | |
| E-69 | Environmental Facilities Sump | X | | | | | | X | |
| E-98 | Exchanger Pad Dry Weather Sump #30 | X | | | | | | X | |
| E-99 | Dry Weather Sump #33 | X | | | | | | X | |
| F-8 | Activated Sludge Unit No. 1 | X | | | | | | X | X |
| F-9 | Activated Sludge Unit No. 2 | X | | | | | | X | X |
| F-11 | Final Clarifier Tank No. 2 | X | | | | | | X | X |
| F-22 | Clarifier Effluent Tank | X | | | | | | X | X |
| F-30 | FCCU 3 Fugitives | X | | | | X | | X | X |
| F-30 | Final Effluent Tank | X | | | | | | X | X |
| F-60 | FCCU 2 Fugitives | X | | | | X | | X | X |
| F-90 | FCCU1 Fugitives | X | | | | X | | X | X |
| F-160 | UU3 Fugitives | X | | | | | | X | |
| F-200 | Ultracracker Fugitives | X | | | | X | | X | |
| F-270 | API Separator No. 3A | X | | | | | | X | |
| F-280 | Tank Farm Fugitives | X | | | | | | X | |
| F-294 | Marine Loading Fugitives | X | | | | | | X | |
| F-379 | Dock 54 Fugitives | X | | | | | | X | |
| F-380 | SRU Fugitives | X | | | | X | | | |
| F-390 | DDU 100/200 Fugitives | X | | | | X | | X | |
| F-393 | DDU 300 Fugitives | X | | | | X | | X | X |
| F-400 | Flare 8 Fugitives | X | | | | X | | X | |
| F-470 | CFHU Fugitives | X | | | | X | | X | |
| F-480 | RHU Fugitives | X | | | | | | X | |
| F-486 | HRU Fugitives | X | | | | X | | X | |
| F-490 | Acid Plant H ₂ S Feed | X | | | | | | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|--------|------------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| F-491 | Acid Plant Sludge Feed | X | | | | | | | |
| FLR-SW | SRU Sour Water System Flare | X | X | X | X | X | | X | X |
| W-01 | Oil/Water Separator - UU4 Unit | X | | | | | | X | |
| W-02 | Oil/Water Separator - DDU Unit | X | | | | | | X | |
| W-06 | Oil/Water Separator - ULC/ARU Unit | X | | | | | | X | |
| W-07 | Oil/Water Separator - ULC Unit | X | | | | | | X | |
| W-12 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |
| W-13 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |

X Emissions from this EPN are included in both the initial and final emission cap.

- (1) Facility does not participate in normal operation annual cap for VOC, PM₁₀, or CO. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.
- (2) Facility does not participate in normal operation annual cap for VOC, NO_x, CO, SO₂, or PM₁₀. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.

Dated December 13, 2011

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*



EPA

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 15, 2013

MS RUTH A CADE
MPC ENVIRONMENTAL MANAGER REFINING DIVISION
BLANCHARD REFINING COMPANY LLC
PO BOX 401
TEXAS CITY TX 77592-0401

Re: Permit Alteration & Alternate 30 TAC Chapter 117 Carbon Monoxide Emission Limitation
Permit Number: 47256
Blanchard Refining Company Galveston Bay Refinery
Texas City, Galveston County
Regulated Entity Number: RN102535077
Customer Reference Number: CN604166868
Account Number: GB-0004-L
Associated Permit Number: PSDTX402M3

RECEIVED
13 APR 23 PM 2:41
AIR PERMITS SECTION
CPD-R

Dear Ms. Cade:

This is in response to your e-mail received April 10, 2013, requesting alteration of the conditions of the above referenced permit and approval of an alternate carbon monoxide (CO) emission limitation from the requirement in 30 Texas Administrative Code (TAC) Chapter 117 Subchapter B. We understand the flexible permit amendment that added planned maintenance, startup, and shutdown (MSS) including startup of the fluid catalytic cracking unit (FCCU) did not clearly address the use of hot standby of the regenerator to affect planned MSS repair or replacement of the unit's ancillary equipment. This is being uniquely authorized through alteration since the activity of torch oil firing at higher short term CO emission rates was authorized, but the activity was not clearly specified with the necessary time frame for planned MSS repair between turnarounds and the emissions can be accommodated in the planned MSS emission cap. The alternate CO limitation was requested as allowed under 30 TAC 117.310(d)(2) and 117.325(a), because the limitation cannot be attained during hot standby torch oil firing to effect planned MSS repair and replacement on ancillary equipment.

The applicable emission limitation in 30 TAC 117.310(c) for FCCU -3 of 400 parts per million by volume dry (ppmvd) CO on a 24 hour average basis is hereby revised to allow a 1,500 ppmvd CO concentration for up to 332 hours per event consistent with the CO emission rate limitations in the application. This is in addition to the alternate limitation previously approved for cold startup after a turnaround. Based on the application representations we believe it is not technically feasible to meet the CO limitation during the industry standard practice of torch oil firing and for the short periods of time involved there is not a known economically practical alternative. The operation does not impact the unit's ability to comply with the nitrogen oxide (NOx) limitations of 30 TAC Chapter 117, applicable to the unit. Therefor in accordance with 30 TAC 117.325 the alternate CO specifications are being approved with conditions as specified in the Special Conditions of the altered permit.

Ms. Ruth A Cade
Page 2
April 15, 2013

Re: Permit Number: 47256

As indicated in Title 30 Texas Administrative Code § 116.721(b) [30 TAC § 116.721(b)], and based on our review, Flexible Permit Number 47256 is altered. Enclosed are the altered special conditions and new permit face to replace those currently attached to your permit. Please attach these to your permit.

Planned maintenance, startup, and shutdown for the sources identified on the MAERT have been reviewed and included in the MAERT and specific maintenance activities are identified in the permit special conditions. Any other maintenance activities are not authorized by this permit and will need to obtain separate authorization.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Mr. Jeff Greif at (512) 239-1534 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Sincerely,



Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

MPW/jg

Enclosure

cc: Director, Office of Environmental Health Pgm Air & Water Pollution Svc, Galveston County
Health District, La Marque
Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review, Section (6PD-R), U.S. Environmental
Protection Agency, Region 6, Dallas

Project Number: 191576



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT

A Flexible Permit Is Herby Issued To
Blanchard Refining Company LLC
Authorizing the Construction and Operation of
Blanchard Refining Company Galveston Bay Refinery
Located at Texas City, Galveston County, Texas
Latitude 29° 21' 38" Longitude 94° 55' 14"



Permit: 47256

Revision Date: April 15, 2013

Renewal Date: July 13, 2015


For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the executive director of the Texas Commission on Environmental Quality (commission) to amend this permit in that regard and such amendment is approved. It shall be unlawful for any person to vary from such representation or flexible permit provision if the change will cause a change in the method of control of emissions, the character of the emissions, or will result in a significant increase in emissions, unless application is made to the executive director to amend the flexible permit in that regard and such amendment is approved by the executive director. [Title 30 Texas Administrative Code 116.721 (30 TAC 116.721)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** The start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.715(c)(2)]
4. **Start-up Notification.** The appropriate regional office of the commission and any local program having jurisdiction shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. Phased construction, which may involve a series of facilities commencing operations at different times, shall provide separate notification for the commencement of operations for each facility. Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).
5. **Sampling Requirements.** If sampling of stacks or process vents is required, the flexible permit holder shall contact the commission's Engineering Services Section, Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the appropriate regional office of the commission. The flexible permit holder is also responsible for providing

- sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.715(c)(4)]
6. **Equivalency of Methods.** It shall be the responsibility of the flexible permit holder to demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the flexible permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.715(c)(5)]
 7. **Recordkeeping.** A copy of the flexible permit along with information and data sufficient to demonstrate continuous compliance with the emission caps and individual emission limitations contained in the flexible permit shall be maintained in a file at the plant site and made available at the request of personnel from the commission or any air pollution control program having jurisdiction. For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the permit holder in the permit application. This information may include, but is not limited to, emission cap and individual emission limitation calculations based on a 12-month rolling basis and production records and operating hours. Additional recordkeeping requirements may be specified in special conditions attached to the flexible permit. Information in the file shall be retained for at least two years following the date that the information or data is obtained. [30 TAC 116.715(c)(6)]
 8. **Maximum Allowable Emission Rates.** A flexible permit covers only those sources of emissions and those air contaminants listed in the table entitled "Emission Sources, Emissions Caps and Individual Emission Limitations" attached to the flexible permit. Flexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit. [30 TAC 116.715(c)(7)]
 9. **Emission Cap Readjustment.** If a schedule to install additional controls is included in the flexible permit and a facility subject to such a schedule is taken out of service, the emission cap contained in the flexible permit will be readjusted for the period the unit is out of service to a level as if no schedule had been established. Unless a special provision specifies the method of readjustment of the emission cap, a permit alteration shall be obtained. [30 TAC 116.715(c)(8)]
 10. **Maintenance of Emission Control.** The facilities covered by the flexible permit shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. Notification for emissions events and scheduled maintenance shall be made in accordance with 30 TAC 101.201 and 101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping). [30 TAC 116.715(c)(9)]
 11. **Compliance with Rules.** Acceptance of a flexible permit by a permit applicant constitutes an acknowledgment and agreement that the holder will comply with all Rules, Regulations, and Orders of the commission issued in conformity with the Texas Clean Air Act (TCAA) and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or flexible permit condition are applicable, then the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the flexible permit. [30 TAC 116.715(c)(10)]
 12. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
 13. **There** may be additional special conditions attached to a flexible permit upon issuance or amendment of the permit. Such conditions in a flexible permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.715(d)]
 14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
 15. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Special Condition Nos. 5 through 56 apply to the normal operations of the facilities authorized under this permit. Special Condition Nos. 57 through 68 apply to the planned maintenance, startup, and shutdown activities authorized by this permit.

Emission Caps and Individual Limitations

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Emission Caps and Individual Emission Limitations," (ECIELT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the ECIELT and other requirements specified in the special conditions.

Planned startup and shutdown emissions due to the activities identified in Special Condition No. 57 are authorized from facilities and emission points identified in Attachment D in other construction permits at the site provided the facility and emissions are compliant with the respective ECIELT and special conditions, or Special Condition No. 66 of this permit. (8/10)

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U. S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, and:
 - A. Sulfuric Acid (H_2SO_4) Production Units, Subpart Cd;
 - B. H_2SO_4 Plants, Subpart H;
 - C. Petroleum Refineries, Subpart J (**per Agreed Order Docket No. 2005-0224-AIR-E**);
 - D. Storage Vessels for Petroleum Liquids, Subpart K;
 - E. Volatile Organic Liquid Storage Vessels, Subpart Kb; and
 - F. Equipment Leaks of Volatile Organic Compounds (VOC) in Petroleum Refineries, Subpart GGG. (8/10)
3. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) in 40 CFR Part 61, Subparts A, and:

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

- A. Equipment Leaks of Benzene, Subpart J;
 - B. Equipment Leaks, Subpart V;
 - C. Benzene Transfer Operations, Subpart BB; and
 - D. Benzene Waste Operations, Subpart FF.
4. These facilities shall comply with all applicable requirements of EPA regulations on NESHAPS in 40 CFR Part 63, Subparts A, and:
- A. Petroleum Refineries, Subparts CC;
 - B. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recover Units, Subpart UUU; and
 - C. Marine Vessel Loading Operations, Subpart Y.

Operational Limitations, Work Practices, and Plant Design

5. Storage tanks are subject to the following requirements: The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
- A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal. Installation of equivalent control requires prior review and approval by the Texas Commission on Environmental Quality (TCEQ) Executive Director.
 - B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

- C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
- D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (API) Code 650, or an equivalent degree of flotation, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

The floating roof design for all new or retrofitted roofs shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 or later except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

- E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum except where a dark color is necessary to help the tank absorb or retain heat in order to maintain the material in the tank in a liquid state. The following existing tanks are exempt from the white or aluminum requirement: Fixed-Roof Tanks 41, 42, 59, 60, 60A, 73, 73A, 1012, and 1013. Storage tanks must be equipped with permanent submerged fill pipes.
 - F. The permit holder shall maintain records which includes tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. (8/10)
6. Pressure tanks shall be maintained such that there are no emissions of VOC to the atmosphere during normal operating conditions (including filling operations). If emissions occur during normal operations, they shall be routed to a flare which achieves at least 98 percent destruction efficiency.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

7. Marine vessel loading operations at this facility are limited to the handling of gasolines, gasoline blending components, gasoline boiling range products, toluene, benzene, distillates, and black oils. Benzene shall only be loaded at one dock at any time. (2/13)
8. Loading emissions from marine loading operations at Dock 54E shall be routed to a thermal oxidizer (EPN 1300) which shall operate at a minimum VOC destruction efficiency of 99.9 percent by weight. The thermal oxidizer firebox temperature shall be maintained at not less than 1800°F on a six minute average period while loading emissions are directed to the oxidizer. After the initial stack test has been completed, the six minute average temperature shall be maintained greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 39.

The thermal oxidizer temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^\circ\text{C}$.

Quality assured (or valid) data must be generated when the thermal oxidizer is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the thermal oxidizer operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (2/13)

9. Loading emissions from marine loading operations at docks other than Dock 54E shall be routed to thermal oxidizers (EPNs 294-1, 294-2, and 294-3) which shall operate at a minimum VOC destruction efficiency of 99 percent by weight. During loading operations, the minimum operating temperature of the thermal oxidizers shall be 1250°F. Records of thermal oxidizer operating temperatures shall be kept for each loading operation. (2/13)
10. Loading rates at the marine docks other than Dock 54 shall be reduced as needed in the event that two of the thermal oxidizers are inoperable. Loading of hydrocarbons with a true vapor pressure of greater than or equal to 0.5 psia at maximum temperature shall cease in the event that all thermal oxidizers are inoperable. Records shall be kept for each loading operation and shall include the name and quantity of material loaded. Operation without visible liquid leaks or spills shall be maintained at all loading/unloading facilities, regardless of vapor pressure. (2/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

10. Marine dock thermal oxidizers other than at Dock 54 (EPNs 294-1, 294-2, and 294-3) shall operate with greater than a stoichiometric quantity of air at all times. (2/13)
11. The holder of this permit shall maintain marine vessel loading equipment in such a manner that vapor-tight connections are made between the dock and the marine vessel. A blower system shall be installed which will produce a vacuum during vapor controlled loading operations (liquid VOC vapor pressure greater than or equal to 0.50 psia). Should the blower system cease operating for any reason, loading operations shall cease immediately. The vacuum system shall be repaired before loading operations can resume. A pressure/vacuum gauge shall be installed such that a negative pressure can be verified in the vessel and/or compartment being loaded. The vacuum shall be recorded every 15 minutes when loading. A vacuum of at least three inches of water shall be maintained during loading. Records of all blower system repairs and associated downtime shall be maintained. (2/13)
12. The marine dock thermal oxidizers shall be equipped with an automatic ignition system that assures gas ignition before loading and provides immediate notification of appropriate personnel when the ignition system ceases to function.
13. Uncontrolled loading of marine vessels without the use of vapor control is allowable under this permit for those materials that have a true vapor pressure of less than 0.50 psia at the actual loading temperature, provided that all applicable federal and state rules and regulations are met.
14. All flares shall be designed and operated in accordance with the following requirements:
 - A. The combined refinery fuel natural gas and waste stream to the flare shall meet the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Compliance with this condition shall be demonstrated by monitoring required in Paragraph D of this condition. Flare testing per 40 CFR § 60.18(f) may be requested by the TCEQ Houston Regional Office, in addition to New Source Performance Standards (NSPS) or federal requirements, to demonstrate compliance with this condition. Testing to confirm the heating value (Btu per standard cubic feet [scf]) may be requested by the TCEQ Houston Regional Office to demonstrate compliance with this condition.
 - B. The flare(s) shall be operated with a pilot flame present at all times and have a constant pilot flame or an automatic re-ignition system. The pilot flame shall be monitored by a thermocouple or an infrared monitor.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

- C. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare (for steam-assisted flares). The permit holder shall ensure proper flare operation through monitoring by Paragraph D of this condition.
- D. The holder of this permit shall install a continuous flow monitor that provides a record of the vent stream flow to the flare. The flow monitor sensor should be installed in the vent stream such that the total vent stream to the flare is measured. The average hourly values of the flow shall be recorded and maintained electronically. The holder of this permit shall provide the daily average flow rate (24-hour average) to each flare. These monitors shall be operational no later than July 13, 2010.

The holder of this permit shall conduct an analysis (grab sample) of the flare composition (total VOC, benzene, hydrogen sulfide (H₂S), and Btu content) on or before May 31, 2007. The analysis shall be conducted on a semiannual basis (once during the summer months and once during the winter months). The holder of this permit may submit a request to the TCEQ Houston Regional Office to reduce the sampling frequency. The sampling shall be conducted such that the total vent stream to the flare is included in the analysis. Records of the grab sampling results, including flare identification number, sampling date, sampling location, flare composition, and calculated net heating value in Btu/scf for each flare, shall be maintained. (PSD) (9/06)

- 15. Safety relief valves that discharge to the atmosphere only as a result of fire shall be equipped with a rupture disc and pressure gauge. The pressure gauge shall be installed between the relief valve and the rupture disc to monitor disc integrity.

Atmospheric relief valves which are not equipped with a rupture disc shall be monitored for leaks on a quarterly basis with an approved gas analyzer beginning no later than July 13, 2007. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves which are not equipped with a rupture disc and pressure gauge or pressure transmitting device.

All leaking discs shall be replaced at the earliest opportunity, but no later than the next unit shutdown. Discs to be replaced shall be identified on an equipment list, and this list shall be made available to TCEQ or local air pollution control program representative.

Records of quarterly atmospheric relief valve monitoring results, including the relief valve identification, monitoring date, monitoring result, disk replacement or installation date, and next unit shutdown date after leak discovery shall be maintained. (8/10)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

Sulfur Recovery/Amine Treating Units

16. The minimum sulfur recovery efficiency for these permitted units shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered}) * (100)}{(\text{S acid gas})}$$

Where:

| | | |
|-------------|---|---|
| Efficiency | = | sulfur recovery efficiency, percent |
| S recovered | = | (S acid gas - S stack, or S produced), long tons per day (LTPD) |
| S acid gas | = | (S recovered plus S stack), LTPD |
| S stack | = | sulfur in incinerator stack, LTPD |

The average sulfur emission reduction efficiency (sulfur recovery efficiency) shall be demonstrated for each 24-hour period by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide (SO₂) monitor, sulfur production records, stack mass flow rate, and other process flow data. Records of the calculated recovery efficiency, sulfur in the incinerator stack, sulfur produced, sulfur in the acid gas, the compliance calculations, and a detailed example of the compliance calculations shown above shall be maintained on-site. The sulfur recovery efficiency of this condition is not applicable during start-up, shutdown, or upset conditions if proper procedures of 30 TAC Chapter 101 are followed. **(PSD)**

17. The total sulfur recovered from the combined SRU Trains (Trains 1 through 4) shall not exceed 1300 LTPD of sulfur (based on a 24-hour period). At no time during normal operation shall the excess capacity be less than 75 percent redundancy. **(PSD)**
18. The SRU thermal reactors that receive ammonia acid gas from the sour water stripper overheads shall at all times be operated with a stable flame, and the SRUs shall operate with a flame temperature within recommended design specifications, but shall operate at no less than 2000°F. The flame temperature of each SRU thermal reactor shall be continuously monitored and recorded.
19. All acid gas streams from the amine regeneration units, and sour water stripper overheads, containing H₂S shall be routed to the SRUs or other process units under normal operating conditions. It is not permissible under any conditions to vent acid gases directly to the atmosphere. **(PSD)**

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 8

20. Emissions from the sulfur pits, sulfur storage, and sulfur loading operations shall be collected by a vapor collection system and routed either back to the SRU thermal reactor or to the SRU Tail Gas Incinerator (TGI). **(PSD)**
21. The minimum firebox chamber temperatures in the SRU TGIs shall not go below 1200°F during normal operating conditions. If stack testing in the TGI exhaust indicates that a higher temperature is necessary to obtain a minimum H₂S and VOC destruction efficiency of 99.9 percent, then the temperature obtained during the stack test will become the new minimum incinerator firebox chamber temperature. The firebox temperature of each TGI shall be continuously monitored and recorded.
22. The SRU TGIs shall operate with no visible emissions except for uncombined steam.
23. Contingency Plan for the SRU

Should there be loss of sulfur recovery potential from the Claus trains, TGTU, or TGIs, any combination of the following steps shall be taken as soon as possible, but no later than two hours from the start of the event:

- A. Reroute the maximum amount of acid gas to the operating SRUs or equipment (such as the remaining sulfur recovery trains, TGTU, and TGI). This action can include increasing the oxygen (O₂) injection rate to add SRU capacity.
- B. Reroute any remaining acid gas to the TGIs. If the TGIs are not operable, the acid gas should be routed to the emergency flares.
- C. Shut down the sour water strippers and accumulate sour water in tankage for future processing.
- D. Reduce production, reduce charge rates at upstream units, and switch to lower-sulfur purchased gas oils and crude oils as necessary to reduce the amine loading and cease acid gas flaring within eight hours of the event. This action may include shutting down one and/or all units which supply acid gas to the SRU complex.
- E. Any other action not listed that will allow the SRU to recover from the loss of sulfur recovery potential. All actions conducted under this paragraph shall be documented. The documentation shall include the specific action taken, time the action was taken, affect on upstream/downstream facilities (heaters, other control devices, etc), and overall affect on emissions from the SRU or other facilities. This documentation shall be included in any reports submitted to the TCEQ Houston Regional Office or local air pollution control program representative. This information shall also be

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 9

maintained on site and made available to TCEQ or local air pollution control program representatives upon request.

The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.

24. Records shall be maintained for all SRU, Tail Gas Treating Unit (TGTU), and TGI downtime. These records shall include the date and duration of downtime, amount of bypassed acid gas flared, the cause of the downtime, and corrective action taken. The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.
25. The sour water stripper system feeding the SRUs shall have a minimum on-line retention and separation (hold up) time of three days based on normal operational levels and maximum expected feed rates.
26. The retention time of the rich amine and lean amine drums shall meet at least 30 minutes of retention at maximum production levels.

FCCUs

27. The final emission caps are based on FCCUs 1 and 3 (Emission Point Nos. [EPNs] 93 and 34) meeting the following concentrations, averaged over a one-hour period.

| | |
|-----------------------------------|----------|
| carbon monoxide (CO) | 500 ppmv |
| SO ₂ | 200 ppmv |
| nitrogen oxide (NO _x) | 200 ppmv |
| VOC | 10 ppmv |

The initial emission caps are based on the following: 500 ppmv CO, and 300 ppmv SO₂ from FCCU 1, and 500 ppmv CO from FCCU 3. **(PSD) (10/10)**

28. The final emission caps are based on the FCCU 1 stack meeting 1.0 pound of particulate matter (PM) per 1,000 pounds of coke burn-off. The final hourly emission cap and individual annual emission limit for FCCU 3 are based on the FCCU stack meeting 0.914 pounds of PM per 1,000 pounds of coke burn-off. The individual hourly and annual emission limits for FCCU 3 are based on the FCCU 3 stack meeting 0.33 pounds of H₂SO₄ per 1,000 pounds of coke burn-off. The PM and H₂SO₄ emissions will be measured per the EPA Methods 5B and 8/TCEQ 24 or other applicable method approved by the TCEQ). **(PSD) (12/11)**

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 10

29. For the final ammonia emission cap, the FCCU 1 electrostatic precipitator shall not exceed 10 ppmv ammonia slip. The ammonia injection rate to the FCCU shall be continuously monitored and recorded. **(12/11)**
30. The opacity of emissions from the FCCUs shall not exceed 20 percent averaged over a six-minute period, as determined by an opacity monitoring device or trained observer, except as provided for in 30 TAC § 111.111(a)(1)(E).
31. The seven-day rolling average of NO_x and SO₂ concentration limits below shall not apply during periods of start-up, shutdown, or malfunction. **(10/10)**

A. FCCU 1 NO_x Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a NO_x limit of 40 ppmvd at zero percent O₂ on a 365-day rolling average and 80 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average NO_x limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

B. FCCU 3 NO_x Concentration Limits

If the permit holder has installed a selective catalytic reduction (SCR) unit on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 20 ppmvd at zero percent O₂ on a 365-day rolling average and 40 ppmvd at zero percent O₂ on a 7-day rolling average basis.

If the permit holder has not installed an SCR on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 30 ppmvd at zero percent O₂ on a 365-day rolling average and 60 ppmvd at zero percent O₂ on a 7-day rolling average basis.

The seven-day rolling average may increase temporarily to 120 ppmvd if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder submits and EPA approves a report detailing reasons for the outage(s) of the SCR or NO_x

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 11

control device within 30 days after the outage occurs. The outages can only be due to reasons other than startup, shutdown or malfunction.

C. FCCU 1 SO₂ Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a SO₂ limit of 50 ppmvd at zero percent O₂ on a 365-day rolling average and 150 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average SO₂ limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

D. FCCU 3 SO₂ Concentration Limits

Beginning July 1, 2007, FCCU 3 (EPN34) shall comply with a SO₂ limit of 25 ppmvd at zero percent O₂ on a 365-day rolling average and 50 ppmvd at zero percent O₂ on a 7-day rolling average basis.

32. The FCCU 3 Regenerator Scrubber (EPN 34) liquid to gas ratio and gas pressure drop shall be continuously monitored and be maintained greater than the minimum one hour average value observed in the last satisfactory stack test performed in accordance with Special Condition 39. The initial stack test for EPN 34 was completed on May 6, 2008. A subsequent stack test will be performed in accordance with Special Condition 39 upon completion of the FCCU 3 Regeneration Project proposed in the amendment, PI-1 dated April 26, 2011.

The flow rates and pressures shall be recorded every 6 minutes as six minute averages and the pH shall be recorded every 15 minutes as 15 minute averages. Each flow and pressure monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

Quality assured (or valid) data must be generated when the FCCU is operating except during the performance of a daily zero and span check, if conducted. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the FCCU operated over the previous rolling 12 month

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 12

period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (12/11)

Fired Units (Heaters and Boilers)

33. The final emission caps are based on fuel gas (used to fire all heaters, boilers, oxidizers, incinerators, flares, and other combustion devices) having an H₂S concentration of 162 ppmv or 0.1 grain per dry standard cubic foot on a one-hour average basis. The H₂S concentration in the fuel gas system shall be continuously monitored and recorded. (PSD) (10/10)
34. The opacity from all heaters, boilers, etc., shall not exceed 5 percent averaged over a six-minute period, except for those periods described in 30 TAC § 111.111(a)(1)(E).
35. The final emissions cap is based on a combined average NO_x emission value of 0.035 lb NO_x/MMBtu from all boilers and heaters.
36. The UC-103B is limited to firing no more than 99 MMBtu/hr. Records verifying the firing rate for this unit shall be maintained on-site.

Wastewater

37. Emissions from wastewater process equipment shall be controlled as follows:
 - A. Emissions from the dissolved air flotation, gravity thickener, and API No. 2 shall be routed to a thermal oxidizer capable of obtaining a VOC destruction efficiency of 99.9 percent.
 - B. Emissions from APIs 1 and 3 shall be routed to a carbon adsorption system. The carbon adsorption system shall be installed and operating no later than July 13, 2010. The carbon adsorption system shall meet the requirements of Special Condition No. 47 of this permit.
 - C. Wastewater process equipment upstream of the biological treatment units (activated sludge) shall either be covered and/or routed to a control device (either a thermal oxidizer, flare, or carbon canister system). (10/10)

Initial and Periodic Sampling Requirements

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 13

38. Sampling port(s) and platforms(s) shall be incorporated into the design of the combustion source stack(s) per specifications in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Platform(s) will not be necessary for existing stacks of combustion facilities that will not be equipped with continuous emissions monitoring system (CEMS) and do not currently have platform(s) included in their design. Alternate sampling facility designs may be submitted for approval by the Executive Director of the TCEQ.
39. The holder of this permit shall perform stack sampling and other testing, as required, to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the following sources:

| |
|---|
| FCCU 1and 3 Stacks (EPNs 93and 34) |
| SRU TGI exhausts before the Common Stack (EPN 384) |
| Marine Dock Thermal Oxidizers (EPNs 294-1, 294-2, 294-3, and 1300) |
| All boilers and heaters with firing rates of 40 MMBtu/hr or greater |
| In addition, common stacks (if any) containing units capable of 40 MMBtu/hr or greater shall also be sampled. |

The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Air Permits Division. Test waivers and alternate/equivalent procedure proposals for 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 14

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Houston Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the listed sources to be tested for include (but are not limited to) the following:

| | |
|---------------------------------------|---|
| FCCU | NO _x , CO, SO ₂ , VOC, TSP*, PM ₁₀ *, ammonia (FCCU 1 only), H ₂ SO ₄ , and O ₂ |
| SRU TGI(s) | SO ₂ , H ₂ S, H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Boilers, Heaters, Furnaces, etc | SO ₂ , H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Marine Dock Thermal Oxidizers | NO _x , CO, VOC, and O ₂ |
| Units equipped with ammonia injection | ammonia |

* TSP - total suspended particulate

* PM₁₀ - particulate matter equal to or less than 10 microns in diameter

- C. Sampling shall occur within 60 days after achieving the maximum production rate at which the facility will be operated, but no later than 180 days after start-up following modification or installation of a emission source (facility), or within 60 days after achieving normal operation (for those units being restarted due to Hurricane Rita), and other such times as determined necessary to verify compliance with the emissions cap as required by the TCEQ Houston Regional Director or the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the TCEQ Houston Regional Office.

The permit holder may submit a request to perform representative sampling for combustion units that are similar in function, heat input, etc. The request shall be submitted to, and approved by, the TCEQ Houston Regional Office before sampling begins.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 15

- D. The EPN being tested shall operate at maximum production, loading, or firing rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the EPN is unable to operate at maximum rates during testing, then additional stack testing may be required when higher firing rates are achieved. (Additional testing will not be required if the EPN is equipped with a CEMS.)
- E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed to the TCEQ Houston Regional Office.
- F. Stack sampling for those units which are not equipped with a CEMS shall be repeated every five years after the initial sampling in conformity with A, B, and D of this condition. Facilities which are not being modified and have been tested in the last five years shall be tested within five years of the last test date (even if those sources have not been tested for VOC during previous tests).
- G. For fired units equipped with ammonia injection, the initial compliance stack test shall test for the presence of ammonia slip in the stack. After the initial stack test, grab samples for ammonia shall be conducted weekly during the first 60 days of operation. After operating procedures have been developed to prevent excess amounts of ammonia from being injected, the frequency of ammonia grab sampling can be reduced to a quarterly basis. If the grab samples exceed 10 ppmv at any time, the holder of this permit shall return to weekly ammonia sampling until such time as repairs are conducted, or the sampling indicates that the ammonia slip is 5 ppmv or less.
- H. The two FCCUs shall be stack sampled for the presence of H_2SO_4 within 60 days after achieving normal operation (after the restart due to Hurricane Rita). The holder of this permit shall submit a permit amendment application within 60 days of completing the stack sampling of the FCCUs to incorporate the H_2SO_4 into an emissions cap, or list the H_2SO_4 emissions as an individual emission limitation. If necessary, the holder of this permit shall include netting calculations, and/or Prevention of Significant Deterioration forms, tables, etc. in the amendment package. The amendment package shall include all calculations, assumptions, best available control technology (BACT) determinations, and a proposal for determining compliance with the short-term and annual emission rate or caps. FCCU 3 satisfied this condition with the PSD amendment application (PI-1 dated April 26, 2011).
(PSD) (2/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 16

40. The holder of this permit shall submit a sampling and testing plan to the TCEQ Houston Regional Office (with a copy routed to the TCEQ Air Permits Division) for review and approval no later than September 13, 2005.

The sampling plan shall specify the sampling methods and other testing, as necessary, to establish the emissions (lb/hr and TPY) of VOC being emitted to the atmosphere from the wastewater system associated with this permit. Sampling and testing shall begin within 60 days of plan approval.

Within 30 days after completion of the sampling, copies of the sampling report shall be submitted to the following:

One copy to the TCEQ Air Permits Division, Austin.
One copy to the TCEQ Houston Regional Office.

Sampling of the wastewater system, as specified in this section, is waived if the permit holder determines that sufficient information is currently available to adequately model the wastewater treating system through the use of Water 8 or Water 9 wastewater model. The applicant shall submit revised emission calculations using one of these models, to the Air Permits Division for review and approval, no later than September 13, 2005 and one of the following permit applications.

- A. If the wastewater models show a decrease in the emission contribution from the wastewater treating facilities compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit alteration to adjust emissions cap to reflect the emissions obtained from the use of the water models.
- B. If the wastewater models show an increase in emissions compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit amendment to increase the final emissions cap. (8/10)

Ongoing Monitoring Requirements

41. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentrations of the following compounds from all of the following facilities by December 31, 2005: (10/10)

A. FCCU Stacks (EPNs 93 and 34): SO₂, NO_x, CO, Opacity, and O₂

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 17

- B. SRU TGI Stacks (EPNs 384): SO₂ and O₂.
 - C. A CEMS to measure and record the in-stack concentrations of NO_x, CO, and O₂ shall be operational and used to monitor emissions from any boiler, heater, or combustion device with a maximum firing rate greater than or equal to 100 MMBtu/hr.
42. Each CEMS required by these conditions shall comply with the following:
- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Air Permits Division for requirements to be met.
 - B. Paragraph B(1) of this condition applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Paragraph B(2) of this condition applies to all other sources:
 - (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the TCEQ Houston Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Houston Regional Director.
 - (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 18

the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly averages concentrations at least once everyday, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of lb/hr at least once every week as follows:

The measured hourly average concentration from the CEMS shall be multiplied by the exhaust gas flow rate of the source (measured by true exhaust flow meters, or measured during the latest stack test performed in accordance with Special Condition No. 39, or calculated using fuel flow meters required by §117.340) to determine the hourly emission rate.

- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The TCEQ Houston Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.
- F. Quality-assured (or valid) data must be generated when the facility generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Houston Regional Director. **(PSD) (8/10)**

43. Boilers, heaters, etc., with maximum firing rates of greater than or equal to 40 MMBtu/hr and less than 100 MMBtu shall be sampled in accordance with this condition. The terms of this condition are effective upon implementation of BACT for a particular device or for combustion devices for which additional controls are not anticipated no later than July 13, 2006.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 19

After completion of the initial stack test, the holder of this permit shall conduct annual stack tests for NO_x and CO. The stack test shall be comprised of no less than the average of three one-hour readings for each pollutant.

The results of the stack test shall be recorded in terms of ppm and converted into values of lb/hr and TPY within 30 days of sampling (unless a mass emission rate can be estimated at the time of the test). The annual stack tests shall start after the initial stack test for each unit and shall occur during the same quarter annually. Stack tests for those boilers and heaters that will not be modified, and are not required to complete the initial stack test in the first year from the issuance of the flexible permit (because they were tested within the last five years), will be completed no later than July 13, 2006. The SO₂ emissions from the unit being tested shall also be estimated on an annual basis using the H₂S concentrations obtained from the H₂S fuel gas monitoring system and the fuel flow rate to the unit being tested.

In addition to the above testing requirements, the fuel flow rate (along with other parameters determined at the pretest meeting to be essential for monitoring a unit's performance) shall be continuously monitored and recorded. Beginning no later than September 13, 2005, the heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling.

Should the stack test from a particular unit indicate an exceedance of the short-term (lb/hr) and/or annual (TPY) emission rate used in the emission cap calculation, the applicant shall provide adequate information to demonstrate continuing compliance with the emissions cap.

Records shall be maintained indicating any exceedance of units represented firing rates. Should the firing rate of any unit exceed its permit representations (represented contribution to the emission cap), the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap. **(8/10)**

44. For boilers, heaters, etc., with maximum firing rates less than 40 MMBtu/hr, the fuel flow rate shall be continuously monitored and recorded. The heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling. In addition, H₂S concentrations shall be obtained from the H₂S fuel gas monitoring system. Records, including the flow, quarterly Btu, and H₂S, shall be maintained and used to indicate any exceedance of a unit's represented firing rate(s). Should the firing rate of any unit exceed its permit representations, the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 20

45. For SRUs that handle ammonia acid gas from sour water stripper overheads, the holder of this permit may do either of the following:
- A. The acid gas exiting the waste heat boilers shall be sampled for ammonia on a quarterly basis. When the ammonia concentration exceeds 300 ppmv, the holder of this permit shall implement procedures or actions that are needed to ensure that the sampled ammonia concentration drops below 300 ppmv by the time the next quarterly sample is taken. Drager tubes or another sampling method, as approved by the TCEQ, shall be used to sample for ammonia.
 - B. The holder of this permit shall inspect the sulfur condenser outlets (each sulfur condenser) on each SRU for the presence of ammonia salt formation or buildup. The inspections shall be conducted on an annual basis, and the TCEQ Houston Regional Office shall be informed prior to conducting the inspection (and given the opportunity to observe the sulfur condenser inspection). If ammonia salts are present, the holder of this permit shall implement a monthly ammonia sampling frequency as described in Paragraph A of this condition and the TCEQ Houston Regional Office shall be notified within 30 days.

The sampling results shall be presented in terms of ppmv. The ammonia sampling of the acid gas exiting the SRUs, or inspections of the sulfur condensers for each SRU shall commence no later than May 13, 2006. Records of sampling/inspection time, date, and sampling/inspection results shall be maintained. (2/13)

46. The holder of this permit shall perform sampling and other testing as necessary to establish and demonstrate ongoing compliance with the VOC emission limits, pounds per hour (lb/hr) and tons per year (TPY), from the cooling towers. The cooling tower return water shall be monitored monthly with an approved air stripping system, or approved equivalent, when the cooling towers are in service. The minimum detection level of the testing system shall be equivalent to no more than approximately 5 ppmv. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. The results of the monitoring and maintenance efforts shall be recorded.

If a leak equivalent to more than the ppmv value listed above is detected, the owner or operator shall repair the leak as soon as practical but not later than 45 calendar days after the holder of this permit receives results of monitoring indicating a leak. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as possible. For the purposes of this permit condition, delay of repair means exceeding the 45-day time frame described above. Prior to exceeding the time frame described above, all documentation of a decision to delay repair shall be submitted to the TCEQ Houston Regional Office for review and approval.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 21

Delay of repair on heat exchanger systems for which leaks have been detected is allowed if the equipment is isolated from the process. In addition, delay of repair is also allowed in the following situations:

- A. If repair is technically infeasible without a shutdown, and a shutdown is expected within the next two months.
- B. Delay of repair is also allowed for up to 120 calendar days if necessary parts or personnel were not available.
- C. Delay of repair is also allowed if repair is technically infeasible without a shutdown and the shutdown would cause greater emissions than the potential emissions from delaying repair. The owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair.

47. Carbon Canister Sampling. The carbon adsorption system controlling emissions from APIs 1 and 3 shall consist of a dual carbon system. (10/10)

- A. The carbon canisters shall be sampled and recorded, three times per week, to determine breakthrough of VOC for the dual carbon systems controlling the APIs and Lift Stations. The carbon canisters shall be sampled and recorded one time per week, to determine breakthrough of VOC for the dual carbon systems controlling Oil Water Separators (OWS) or Dry Weather Sumps (DWS) on the units in or outside battery limit (OSBL) areas. The sampling point shall be at the outlet of the first carbon bed but before the inlet to the second carbon bed.
- B. Breakthrough shall be defined as a VOC concentration of 100 ppmv as measured as methane. When VOC breakthrough is detected, the waste gas flow shall be directed to a portable dual carbon system while the saturated carbon is replaced with fresh carbon. Sufficient fresh activated carbon shall be maintained at the site such that spent carbon can be replaced as specified.
- C. The method of VOC sampling and analysis shall be by photo-ionization detector (PID), Ultraray, or a TCEQ equivalent as approved by the Regional Office. On each day that sampling is to occur, the analyzer shall be calibrated prior to sampling with a certified gas mixture at 100 ppmv \pm 10 percent.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 22

- D. Records of the carbon canister monitoring maintained at the plant site shall include (but are not limited to) the following:
- (1) Monitoring results;
 - (2) Corrective action taken (including the time and date of that action) when breakthrough occurs; and
 - (3) Process operations at the time that breakthrough occurs. (3/08)

Compliance Assurance Monitoring

48. The following requirements apply to capture systems for the plant flare system and the FCCU 3 scrubber.

A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. The control device shall not have a bypass.

or

If there is a bypass for the control device, comply with either of the following requirements:

- (1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or
- (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals that prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, conservation vents on tanks, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 23

least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

- C. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above. (12/11)

Leak Detection and Repair (LDAR) Programs

49. [reserved]

50. [reserved]

51. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - 28VHP (8/10)

Except as may be provided for in the special conditions of this permit, the following requirements apply to all fugitive components at the units authorized under this permit:

- A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68°F or (2) to piping and valves two inches nominal size and smaller or (3) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable ANSI, API, ASME, or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 24

performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the line or valve must have a cap, blind flange, plug, or second valve installed, or the open-ended valve or line shall be monitored for leaks above background within 72 hours. The open-ended valve or line shall be monitored weekly thereafter with an approved gas analyzer and the results recorded. Leakage indicated by readings above background must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a) - (b).

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 25

- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.
 - I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
 - J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
 - K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Paragraphs F through G of this condition.
 - L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations.
52. All process drains shall be instrument-monitored with an approved gas analyzer on an annual basis using a 500 ppmv leak definition. The gas analyzer shall conform to the requirements listed in 40 CFR § 60.485(a)-(b).
53. Ambient H₂S monitors shall be placed through the sulfur recovery, amine regeneration, and sour water stripper areas. These monitors shall be arranged in such a way that coverage is provided for all wind directions. The monitors shall be set to alarm at 10 ppmv and shall

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 26

alarm in the control room. A plot identifying the number and location of each monitor shall be maintained in the control room handling each one of the areas described above.

54. Piping, Valves, Pumps, and Compressors in Ammonia (NH₃), H₂S, and SO₂ Service
(10/10)

- A. Audio, olfactory, and visual checks for NH₃, H₂S, and SO₂ leaks within the following operating areas shall be made once per shift (once every 12 hours):

| Pollutant(s) | Operating Area(s) |
|--------------------------------------|--|
| NH ₃ | Aqueous ammonia storage and piping |
| H ₂ S and SO ₂ | SRU, sour water stripper area, amine contactor and regenerator, and hydrotreater areas handling H ₂ S and SO ₂ |

- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall:

- (1) Stop the leak by taking the equipment out of service, or
- (2) Bypass the equipment so that it is no longer in service, or
- (3) Isolate the leak, or
- (4) Commence repair or replacement of the leaking component.

If the leak cannot be repaired within six hours, the holder of this permit shall use clamping procedures to prevent the leak until replacement or repair can be performed.

Records shall be maintained at the plant site of all repairs and replacements made due to leaks. A reminder that visual checks for NH₃, H₂S, and SO₂ leaks need to be made once per shift shall be included in the appropriate unit operator manual no later than September 13, 2005. **(8/10)**

Emission Cap Compliance Recordkeeping

55. The holder of this permit shall use continuous emissions data, sampling data, firing rates, throughput, fill rates, etc, to perform emission calculations at least once every month in order to verify compliance with the annual (TPY) emission caps. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and TPY emissions caps and individual emission limitations and provide such

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 27

demonstration of compliance to the TCEQ or local air pollution control program representatives upon request.

If any information obtained from parameter monitoring (throughput, pump rates, etc.), sampling data or continuous emission monitor (CEM) data indicates that a facility is exceeding its proposed contribution to the emissions cap (lb/hr and/or TPY), the holder of this permit shall provide adequate information to demonstrate that the lb/hr and/or TPY emissions caps were not exceeded, and that the BACT representations for the facilities contributing to the emissions CAP is being met.

For the time period between July 13, 2005, and July 31, 2005, the facilities contained in this flexible permit will show compliance with their individual emission limitations in accordance with their respective authorization, e.g., permit, exemption, permit-by-rule.

For the time period August 1, 2005 through July 31, 2006, compliance with emissions caps and individual emission limitations will be on an apportioned calendar basis (apportioned meaning that each month is allotted 1/12th of the annual emissions cap or individual emission limitation).

After July 31, 2006, compliance with the annual emission caps and individual emission limitations of this flexible permit shall be based on a rolling 12-month basis. **(8/10)**

56. Emissions from sources covered under this permit shall be determined as follows. If a source type is not listed below, the permit holder shall use the methodology which was used in the permit application.

Atmospheric Storage Tanks: Emissions for tanks shall be calculated using: (a) AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" and (b) the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks." Short-term emission rate shall be based on the maximum expected pumping rate (fixed-roof) and the higher of the pumping rate or withdrawal rate (IFR and EFR).

Marine Loading: AP-42 Chapter 5.2-4 (Fifth Edition) L_L Equation - The collection efficiency is 100 percent collection (vacuum loading system) for all compounds equal to or greater than 0.5 psia.

Piping Fugitives: Component counts, emission factors, and reduction credits specified in the permit application for the various inspection and maintenance programs.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 28

Boilers and Heaters: CEM information if such a device is installed. The most recent stack test results if a CEM is not installed. If no stack sampling is required, use the proper emission factor for the specific unit and the measured Btu value and flow rate of the fuel.

SRU and FCCU: CEM information. Use the most recent stack test for those compounds which are not subject to CEM requirements. **(10/10)**

Maintenance, Startup, and Shutdown (MSS) Activities

57. This permit authorizes the emissions from the facilities identified in Attachment D for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

- A. The process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
- B. The type of planned MSS activity and the reason for the planned activity;
- C. The common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;
- D. The date and time of the MSS activity and its duration;

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 29

- E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions authorized by this permit shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. (8/10)

- 58. Process units and facilities, with the exception of those identified in Special Condition Nos. 61, 62, 64, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

- A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.
- B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
- C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.
- D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 30

verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of Paragraph D(2) of this condition. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) (or equivalent) per the site safety procedures.
 - (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's or P&ID's may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 59. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample locations and collection systems must be located downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.
- E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:
- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 31

- (2) There is not an available connection to a plant control system (flare).
- (3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere per Paragraph E of Special Condition No. 58 must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B. (8/10)

59. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded.
- (2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in Subparagraph (3) of this condition, the concentration measured is at least 20 percent of the maximum range of the tube.
- (2) The tube is used in accordance with the manufacturer's guidelines.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 32

- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) less than release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
- (3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane. **(8/10)**

60. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- A. a cap, blind flange, plug, or second valve must be installed on the line or valve; or

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 33

- B. the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once at the end of the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings 20 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. (8/10)
61. This permit authorizes emissions from the storage tanks identified in Attachment D during planned floating roof landings. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Emissions from change of service tank landings shall not exceed 10 tons of VOC in any rolling 12-month period. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the ECIELT. The following requirements apply to tank roof landings.
- A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.
 - B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:
 - (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 34

other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

- (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.
 - (3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition No. 59.
 - (4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.
 - (5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.
- C. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in Paragraph D of this condition is satisfied.
- (1) Minimize air circulation in the tank vapor space.
 - a. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
 - b. Access points shall be closed when not in use.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 35

- (2) Minimize time and VOC partial pressure.
 - a. The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psi as documented by the method specified in Paragraph D(1) of this condition;
 - b. Blowers may be used to move air through the tank without emission control at a rate not to exceed 12,000 cubic feet per minute for no more than 12 hours. All standing liquid shall be removed from the tank during this period; and
 - c. Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.
- D. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.
 - (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
 - (2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:
 - a. Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A Appendix 1.
 - b. Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 36

- c. Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1,000 ppmv through the procedure in Special Condition No. 59.

(3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:

- (1) Only one benzene tank with a landed floating roof can be filled at any time at a rate not to exceed 1,000 bbl/hr.
- (2) The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.

F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

- (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
- (2) the reason for the tank roof landing;
- (3) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:
 - a. the roof was initially landed,
 - b. all liquid was pumped from the tank to the extent practical,
 - c. start and completion of controlled degassing, and total volumetric flow,

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 37

- d. all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,
 - e. if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,
 - f. refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and
 - g. tank roof off supporting legs, floating on liquid.
 - (4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application, PI-1, submitted January 5, 2007.
(8/10)
62. Storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. This shall be verified and documented through one of the criteria identified in Paragraph C of Special Condition No. 61. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC partial pressure greater than 0.02 psi vapor as necessary to set up for degassing and cleaning. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of Subparagraphs B(1) through B(5) of Special Condition No. 61 and records maintained per Subparagraphs E(3)c through E(3)e, and E(4) of Special Condition No. 61. Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia. (8/10)
63. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:
- A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.
 - B. Equip fill line intake with a "duckbill" or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 38

- C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.
 - (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.
 - (2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.
 - (3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by Special Condition No. 67, measured using an instrument meeting the requirements of Special Condition No. 59.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
 - D. The permit holder shall determine the vacuum truck emissions each month using the vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.
 - E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Paragraphs A through D of this condition do not apply. (8/10)
64. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 39

- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
 - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.
 - C. These requirements do not apply to vessels storing less than 100 gallons of liquid that are closed such that the vessel does not vent to atmosphere.
 - D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
 - E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application. (8/10)
65. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. (8/10)
66. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment D during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.
- A. Combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in special conditions in other NSR permits during planned startup and shutdown if the following criteria are satisfied.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 40

- (1) The maximum allowable emission rates in the permit authorizing the facility are not exceeded.
- (2) The startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.
- (3) Control devices are started and operating properly when venting a waste gas stream.

- B. The limits identified below apply to the operations of the specified facilities during startup and shutdown.

During periods of startup of FCCU-3, the CO emissions are not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmv at 3 percent O₂ on a rolling 24-hour average basis. A CO continuous emission monitor must be properly operated and maintained. The emissions during startup can average 1,500 ppmv at 3 percent O₂ on a rolling 24-hour average basis for up to two days.

- C. FCCU-3 is authorized to operate in hot standby mode for up to 336 hours per event as necessary to accommodate planned maintenance and repair of components associated with the unit. Torch oil combustion emissions through the wet scrubber control for EPN 34 shall be continuously monitored as required for normal operation and start up and shutdown, but the emissions shall be accounted and show compliance hourly and 12 month rolling in the Planned MSS Emissions Cap. During these periods of hot standby the CO is not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmvd at 3 percent O₂ on a rolling 24-hour average basis. The vent emission shall not exceed a 1,500 ppmvd at 3 percent O₂ on a rolling 24-hour average basis during hot standby mode.

- D. A record shall be maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each have been satisfied.

(4/13)

67. Additional or temporary control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device. (4/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 41

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS). (12/11)

- (1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.
- (2) The CAS shall be sampled down stream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:
 - a. CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.
 - b. Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.
 - c. The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.
- (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59.
- (4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 42

canisters are switched. Sufficient new activated carbon shall be maintained at the site to replace spent carbon such that replacements can be done in the above specified time frame.

- (5) Records of CAS monitoring shall include the following:
 - a. Sample time and date.
 - b. Monitoring results (ppmv).
 - c. Canister replacement log.
- (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.
- (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer

- (1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1,250°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

The thermal oxidizer combustion chamber exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 43

- (2) As an alternative to Paragraph B(1) of this condition, the thermal oxidizer may be tested to confirm a minimum of 99 weight percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. A stack test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable EPA Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer and a summary of the testing results shall be included with the emission calculations.
- (3) As an alternative to Paragraphs B(1) and B(2) of this condition, the thermal oxidizer may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained in accordance with Special Conditions No. 59, except Paragraph C of Special Condition No. 59. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations shall be measured and inlet and outlet VOC mass rates shall be calculated on an hourly basis to confirm minimum 99 weight percents destruction efficiency or an exhaust concentration no greater than 20 ppmv.

C. Internal Combustion Engine.

- (1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.
- (2) The engine must have been stack tested with butane or propane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition No. 59 are also acceptable for this documentation.

The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 44

the requirements of Special Condition No. 59.A. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

- (3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. Flares

- (1) The heating value and velocity requirements in 40 CFR § 60.18 shall be satisfied during operations authorized by this permit.
- (2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- (3) The permit holder shall either demonstrate 40 CFR § 60.18 BTU requirements are met during the MSS flaring activity using engineering calculations or install a continuous flow monitor and either a composition analyzer that provides a record of the vent stream flow and total VOC content to the flare or a calorimeter that provides a record of the Btu content of the vent stream flow to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition or BTU content shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ± 5.0 percent, temperature

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 45

monitor shall be ± 2.0 percent at absolute temperature, and pressure monitor shall be ± 5.0 mm Hg;

If a total VOC analyzer is installed, calibration of the composition analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

If a calorimeter is installed, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes. If a total VOC analyzer is installed, hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated January 5, 2007. (8/10)

- E. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.
- (1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.
 - (2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59A.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 46

- (3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

F. A closed loop refrigerated vapor recovery system

- (1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).
- (2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition No. 59.
- (3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

68. With the exception of the ECIELT emission limits, Special Condition Nos. 57 through 67 become effective 180 days after the permit amendment received by the TCEQ on January 5, 2007, has been approved. During this period, monitoring and recordkeeping shall satisfy the requirements of Paragraphs A through D of Special Condition No. 57. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. The permit holder may maintain abbreviated records of emissions from Attachment A and B activities as allowed in Special Condition No. 57 rather than documenting all the information required by Paragraphs A through D of Special Condition No. 57.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 47

Other Requirements

69. The FCCU1 project authorized by the alteration application, dated October 14, 2010, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 33.98 | 68.08 | 139.69 | 312.56 | 17.64 |
| 80 | B501 Furnace | 46052 | 4.33 | 3.24 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.80 | 7.54 | 2.23 | 1.02 | 1.61 |
| 384 | SRU C&D Incin | 47256 | 52.68 | 30.89 | 0.00 | 115.19 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 43.08 | 72.46 | 154.55 | 251.82 | 22.36 |
| 80 | B501 Furnace | 46052 | 4.34 | 3.25 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.81 | 7.66 | 2.26 | 1.03 | 1.64 |
| 384 | SRU C&D Incin | 47256 | 52.69 | 30.89 | 0.00 | 115.20 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1). (12/11)

70. The FCCU3 project authorized by the amendment application, dated April 26, 2011, was determined not to be subject to major new source review for CO, NO_x, PM/PM₁₀/PM_{2.5}, SO₂, or VOC by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 48

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 851.73 | 173.86 | 289.77 | 199.94 | 38.61 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.44 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.86 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.26 | 26.19 | | 366.62 | 2.14 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 499.23 | 109.33 | 299.67 | 190.29 | 33.98 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.45 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.87 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.29 | 26.19 | | 366.65 | 2.14 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 49

71. The Tank 117 throughput increase project associated with the permit amendment application, PI-1 dated October 22, 2012, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities modified or potentially affected by the project. Actual emissions from tank 117 shall be monitored, recorded, and reports made in accordance with 30 TAC §116.127 for the time period specified in 30 TAC §116.127(b) (1). The projected actual rate for tank 117 is 1.55 tpy VOC. (2/13)

Dated April 15, 2013

ATTACHMENT A

Flexible Permit Numbers 47256 and PSDTX402M3

Inherently Low Emitting Activities

| Activity | Emissions | | | | |
|--|-----------|-----------------|----|-----------------|------------------|
| | VOC | NO _x | CO | SO ₂ | H ₂ S |
| Analyzer calibration | X | X | X | X | X |
| Analyzer filter changeouts | X | | | | X |
| Carbon canister replacement | X | | | | |
| Equipment Lubrication (WD-40, etc.) | X | | | | |
| Injection quill repairs / replacement | X | | | | |
| Instrumentation repairs / replacement | X | | | | |
| Meter proving | X | | | | |
| Process Sampling | X | | | | X |
| Sight glass or level instrument maintenance / repair / replacement | X | | | | X |
| Solvent cleaning of fixed, immovable objects | X | | | | |

Dated December 13, 2011

ATTACHMENT B

Flexible Permit Numbers 47256 and PSDTX402M3

Routine Maintenance Activities

Planned MSS activities performed with work orders where the isolated system volume is less than 30 cubic feet. These include activities such as:

Pump repair/replacement
Fugitive component (valve, pipe, flange) repair/replacement
Compressor repair/replacement
Heat exchanger repair/replacement
Vessel repair/replacement

Dated December 13, 2011

ATTACHMENT C

Flexible Permit Numbers 47256 and PSDTX402M3

MSS Activity Summary

| Facilities | Description | Emissions Activity | EPN or Group |
|-------------------------------------|--|---|-------------------------------------|
| all process units | process unit shutdown/depressurize/drain | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units | process unit purge/degas/drain | vent to atmosphere | F-1000 |
| all process units | process unit startup | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| FCCU-3 | hot standby to allow ancillary equipment repair / replacement. | Torch oil firing in the regenerator to maintain temperature | 34 |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | recovery from facility / component repair / replacement | vent to flare | Flares and Incinerators |
| all process units and storage tanks | recovery from facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | preparation for unit turnaround or facility/component repair/replacement | remove liquid | F-1000 |
| all floating roof storage tanks | tank roof landing | operation with landed roof | F-1000 |
| all floating roof storage tanks | degas of tank with landed roof | vent to control device | 311, 321, 331, 400, TEMP1 and TEMP2 |
| all storage tanks | tank cleaning | cleaning activity and solvents | F-1000 |
| see Attachment A | miscellaneous low emitting activities | see Attachment A | F-1000 |

Dated April 15, 2013

ATTACHMENT D

Flexible Permit Number 47256 and PSDTX402M3

Facility List

This permit authorizes emissions from the following temporary facilities used to support planned maintenance, startup, and shutdown (MSS) activities at permanent site facilities: frac tanks, containers, vacuum trucks, portable control devices identified in Special Condition No. 67 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

This permit authorizes MSS emissions from the permanent site facilities identified below. The headings for each group of facilities (Process Units, Tanks, etc) are used in the MSS Activity Summary to identify all facilities in the respective group.

| Process Units | | |
|----------------------------------|--------------|------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Alkylate 3 Debutanizer Unit | ALKY3DB | 20850 |
| Alkylation Unit No. 2 | ALKY2 | 47256/PSDTX402M3 |
| Alkylation Unit no. 3 | ALKY3 | 9606 |
| Aromatics Recovery Unit | ARU | 2231 |
| Aromatics Unit 2 | AU2 | 2612 |
| Cat Feed Hydrotreater Unit | CFHU | 47256/PSDTX402M3 |
| Coker Residuum Preheat System | N/A | 6592 |
| Coking Complex | Coker | 2315 |
| Distillate Desulphurization Unit | DDU | 47256/PSDTX402M3 |
| Distillate Ultrafiner Facility | N/A | 47256/PSDTX402M3 |
| Docks | Docks | 47256/PSDTX402M3 |
| Environmental Facility | ENVF | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 1 | FCCU1 | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 3 | FCCU3 | 47256/PSDTX402M3 |
| Hydrocarbon Tank 537 | N/A | 1940 |
| Hydrogen Recovery Unit | HRU | 47256/PSDTX402M3 |
| Naphtha Desulphurization Unit | NDU | 46052 |
| Pipestills 3A and 3B | PS3A/B | 19599 |
| Power Station No. 2 | PWRS2 | 47256/PSDTX402M3 |
| Raffinate Splitter Tower | N/A | 47256/PSDTX402M3 |
| Resid Deasphalting Unit | RDU | 47256/PSDTX402M3 |
| Resid Hydrotreating Unit | RHU | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| Process Units | | |
|---------------------------|---------------|---------------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Sulfur Recovery Unit | SRU | 47256/PSDTX402M3 |
| Tank Farm | OMCC | 2231 and 47256/PSDTX402M3 |
| Ultracracker Unit | ULC ancillary | 2609 |
| Ultraformer Unit No. 3 | UU3 | 47256/PSDTX402M3 |
| Ultraformer Unit No. 4 | UU4 | 6488 |
| Wastewater Treatment Unit | WWTP | 22107 |

| Flares, Incinerators and other Control | | |
|--|--------|------------------|
| Flare or Incinerator Number | EPN | NSR Permit No. |
| Refinery Flare No. 2 | 311 | 47256/PSDTX402M3 |
| Refinery Flare No. 3 | 321 | 47256/PSDTX402M3 |
| Refinery Flare No. 4 | 331 | 47256/PSDTX402M3 |
| ULC Flare | 351A | 47256/PSDTX402M3 |
| SRU A/B Flare | 381 | 47256/PSDTX402M3 |
| SRU C/D Flare | 383 | 47256/PSDTX402M3 |
| SRU Incinerator C and D | 384 | 47256/PSDTX402M3 |
| DDU Flare | 396A | 47256/PSDTX402M3 |
| Flare 8 | 400 | 47256/PSDTX402M3 |
| CFHU Flare 1 | 501 | 47256/PSDTX402M3 |
| SRU Sour Water System Flare | FLR-SW | 47256/PSDTX402M3 |
| Ground Flare #5 | TCH-5 | 15497 |
| Flare 6 | 530 | 9606 |
| AU2 Flare | 611 | 2612 |
| Temporary Control Device No. 1 | TEMP1 | 47256/PSDTX402M3 |
| Temporary Control Device No. 2 | TEMP2 | 47256/PSDTX402M3 |
| FCCU-3 Regenerator Scrubber | 34 | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|--------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 4 | 280-4 | 47256/PSDTX402M3 |
| Tank 5 | 280-5 | 47256/PSDTX402M3 |
| Tank 7 | 280-7 | 47256/PSDTX402M3 |
| Tank 8 | 280-8 | 2231 |
| Tank 9 | 280-9 | 2231 |
| Tank 10 | 280-10 | 2231 |
| Tank 11 | 280-11 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| Storage Tanks | | |
|---------------|---------|---------------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 12 | 280-12 | 47256/PSDTX402M3 |
| Tank 13 | 280-13 | 47256/PSDTX402M3 |
| Tank 13A | 280-13A | 47256/PSDTX402M3 |
| Tank 14 | 280-14 | 47256/PSDTX402M3 |
| Tank 14A | 280-14A | 47256/PSDTX402M3 |
| Tank 16 | 280-16 | 47256/PSDTX402M3 |
| Tank 17 | 280-17 | 47256/PSDTX402M3 |
| Tank 18 | 280-18 | 47256/PSDTX402M3 |
| Tank 19 | 280-19 | 2231 |
| Tank 20 | 280-20 | 2231 |
| Tank 22 | 280-22 | 47256/PSDTX402M3 |
| Tank 23 | 280-23 | 47256/PSDTX402M3 |
| Tank 24 | 280-24 | 47256/PSDTX402M3 |
| Tank 25 | 280-25 | 47256/PSDTX402M3 |
| Tank 26 | 280-26 | 47256/PSDTX402M3 |
| Tank 27 | 280-27 | 47256/PSDTX402M3 |
| Tank 28 | 280-28 | 2231 |
| Tank 29 | 280-29 | 2231 |
| Tank 30 | 280-30 | 2231 |
| Tank 31 | 280-31 | 47256/PSDTX402M3 |
| Tank 32 | 280-32 | 47256/PSDTX402M3 |
| Tank 34 | 280-34 | 47256/PSDTX402M3 |
| Tank 36 | 280-36 | 2231 |
| Tank 37 | 280-37 | 2231 and 47256/PSDTX402M3 |
| Tank 38 | 280-38 | 2231 and 47256/PSDTX402M3 |
| Tank 39 | 280-39 | 2231 |
| Tank 41 | 280-41 | 47256/PSDTX402M3 |
| Tank 42 | 280-42 | 47256/PSDTX402M3 |
| Tank 43 | 280-43 | 47256/PSDTX402M3 |
| Tank 43A | 280-43A | 47256/PSDTX402M3 |
| Tank 44 | 280-44 | 47256/PSDTX402M3 |
| Tank 45 | 280-45 | 47256/PSDTX402M3 |
| Tank 46 | 280-46 | 47256/PSDTX402M3 |
| Tank 47 | 280-47 | 47256/PSDTX402M3 |
| Tank 48 | 280-48 | 47256/PSDTX402M3 |
| Tank 48A | 280-48A | 47256/PSDTX402M3 |
| Tank 49 | 280-49 | 47256/PSDTX402M3 |
| Tank 50 | 280-50 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 51 | 280-51 | 47256/PSDTX402M3 |
| Tank 52 | 280-52 | 47256/PSDTX402M3 |
| Tank 53 | 280-53 | 47256/PSDTX402M3 |
| Tank 54 | 280-54 | 47256/PSDTX402M3 |
| Tank 55 | 280-55 | 47256/PSDTX402M3 |
| Tank 56 | 280-56 | 47256/PSDTX402M3 |
| Tank 57 | 280-57 | 47256/PSDTX402M3 |
| Tank 59 | 280-59 | 47256/PSDTX402M3 |
| Tank 60 | 280-60 | 47256/PSDTX402M3 |
| Tank 60A | 280-60A | 47256/PSDTX402M3 |
| Tank 61 | 280-61 | 47256/PSDTX402M3 |
| Tank 63 | 280-63 | 47256/PSDTX402M3 |
| Tank 64 | 280-64 | 47256/PSDTX402M3 |
| Tank 65 | 280-65 | 47256/PSDTX402M3 |
| Tank 66 | 280-66 | 47256/PSDTX402M3 |
| Tank 67 | 280-67 | 47256/PSDTX402M3 |
| Tank 71 | 280-71 | 47256/PSDTX402M3 |
| Tank 72 | 280-72 | 47256/PSDTX402M3 |
| Tank 73 | 280-73 | 47256/PSDTX402M3 |
| Tank 73A | 280-73A | 47256/PSDTX402M3 |
| Tank 80 | 280-80 | 47256/PSDTX402M3 |
| Tank 90 | 280-90 | 47256/PSDTX402M3 |
| Tank 91 | 280-91 | 47256/PSDTX402M3 |
| Tank 92 | 280-92 | 47256/PSDTX402M3 |
| Tank 93 | 280-93 | 47256/PSDTX402M3 |
| Tank 94 | 280-94 | 47256/PSDTX402M3 |
| Tank 95 | 280-95 | 47256/PSDTX402M3 |
| Tank 97 | 280-97 | 47256/PSDTX402M3 |
| Tank 98 | 280-98 | 47256/PSDTX402M3 |
| Tank 100 | 280-100 | 47256/PSDTX402M3 |
| Tank 101 | 280-101 | 2231 |
| Tank 102 | 280-102 | 2231 |
| Tank 103 | 280-103 | 47256/PSDTX402M3 |
| Tank 103A | 280-103A | 47256/PSDTX402M3 |
| Tank 104 | 280-104 | 47256/PSDTX402M3 |
| Tank 105 | 280-105 | 47256/PSDTX402M3 |
| Tank 106 | 280-106 | 47256/PSDTX402M3 |
| Tank 107 | 280-107 | 2231 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 108A | 280-108A | 2231 |
| Tank 110 | 280-110 | 47256/PSDTX402M3 |
| Tank 111 | 280-111 | 2231 |
| Tank 112 | 280-112 | 2231 |
| Tank 113 | 280-113 | 2231 |
| Tank 114 | 280-114 | 2231 |
| Tank 115 | 280-115 | 2231 |
| Tank 116 | 280-116 | 2231 |
| Tank 117 | 280-117 | 47256/PSDTX402M3 |
| Tank 117A | 280-117A | 47256/PSDTX402M3 |
| Tank 118 | 280-118 | 47256/PSDTX402M3 |
| Tank 127 | 280-127 | 47256/PSDTX402M3 |
| Tank 128 | 280-128 | 47256/PSDTX402M3 |
| Tank 129 | 280-129 | 47256/PSDTX402M3 |
| Tank 130 | 280-130 | 47256/PSDTX402M3 |
| Tank 131 | 280-131 | 47256/PSDTX402M3 |
| Tank 140 | 280-140 | 47256/PSDTX402M3 |
| Tank 181 | 280-181 | 47256/PSDTX402M3 |
| Tank 183 | 280-183 | 2231 |
| Tank 184 | 280-184 | 2231 |
| Tank 185 | 280-185 | 2231 |
| Tank 186 | 280-186 | 2231 |
| Tank 187 | 280-187 | 2231 |
| Tank 188 | 280-188 | 2231 |
| Tank 269 | 280-269 | 47256/PSDTX402M3 |
| Tank 269A | 280-269A | 47256/PSDTX402M3 |
| Tank 270 | 280-270 | 47256/PSDTX402M3 |
| Tank 295 | 280-295 | 47256/PSDTX402M3 |
| Tank 296 | 280-296 | 47256/PSDTX402M3 |
| Tank 297 | 280-297 | 47256/PSDTX402M3 |
| Tank 298 | 280-298 | 47256/PSDTX402M3 |
| Tank 501 | 280-501 | 47256/PSDTX402M3 |
| Tank 502 | 280-502 | 47256/PSDTX402M3 |
| Tank 503 | 280-503 | 47256/PSDTX402M3 |
| Tank 504 | 280-504 | 47256/PSDTX402M3 |
| Tank 520 | 280-520 | 2231 |
| Tank 528 | 280-528 | 47256/PSDTX402M3 |
| Tank 529 | 280-529 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| Storage Tanks | | |
|---------------|-----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 530 | 280-530 | 47256/PSDTX402M3 |
| Tank 531 | 280-531 | 47256/PSDTX402M3 |
| Tank 532 | 280-532 | 2231 |
| Tank 533 | 280-533 | 2231 |
| Tank 534 | 280-534 | 2231 |
| Tank 535 | 280-535 | 2231 |
| Tank 536 | 280-536 | 47256/PSDTX402M3 |
| Tank 537 | 280-537 | 1940 |
| Tank 538 | 280-538 | 2231 |
| Tank 560 | 280-560 | 47256/PSDTX402M3 |
| Tank 561 | 280-561 | 47256/PSDTX402M3 |
| Tank 608-F | 108-608 | 2231 |
| Tank 609-F | 108-609 | 2231 |
| Tank 652 | 280-652 | 47256/PSDTX402M3 |
| Tank 653 | 280-653 | 47256/PSDTX402M3 |
| Tank 1004 | 280-1004 | 47256/PSDTX402M3 |
| Tank 1004A | 280-1004A | 47256/PSDTX402M3 |
| Tank 1011 | 76 | 6592 |
| Tank 1012 | 480-1012 | 47256/PSDTX402M3 |
| Tank 1013 | 480-1013 | 47256/PSDTX402M3 |
| Tank 1018 | 280-1018 | 47256/PSDTX402M3 |
| Tank 1020 | 280-1020 | 47256/PSDTX402M3 |
| Tank 1021 | 280-1021 | 47256/PSDTX402M3 |
| Tank 1023 | 280-1023 | 47256/PSDTX402M3 |
| Tank 1024 | 280-1024 | 47256/PSDTX402M3 |
| Tank 1025 | 280-1025 | 47256/PSDTX402M3 |
| Tank 1039 | 280-1039 | 47256/PSDTX402M3 |
| Tank 1041 | 280-1041 | 2231 |
| Tank 1042 | 280-1042 | 2231 |
| Tank 1044 | 280-1044 | 2231 |
| Tank 1045 | 280-1045 | 47256/PSDTX402M3 |
| Tank 1046 | 280-1046 | 47256/PSDTX402M3 |
| Tank 1047 | 280-1047 | 47256/PSDTX402M3 |
| Tank 1048 | 280-1048 | 47256/PSDTX402M3 |
| Tank 1051 | 280-1051 | 47256/PSDTX402M3 |
| Tank 1052 | 280-1052 | 4714 |
| Tank 1053 | 280-1053 | 4714 |
| Tank 1055 | 280-1055 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 3010 | 280-3010 | 47256/PSDTX402M3 |
| Tank 4000 | 280-4000 | 47256/PSDTX402M3 |
| Tank 4011 | 280-4011 | 47256/PSDTX402M3 |
| Tank 4016 | 280-4016 | 47256/PSDTX402M3 |

Dated April 15, 2013

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Emission Points included in Normal Operation Emission Caps

This table indicates the emission caps which normal operations emissions from an emission point are included in.

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 33 | FCCU 3 404B Heater | X | X | X | X | | X | | |
| 34 | FCCU No. 3 (1) | X | X | X | X | | X | | |
| 61 | FCCU 2 BA201 Heater | X | X | X | X | | X | | |
| 78 | Coker Feed Preheater B302 | X | X | X | X | | X | | |
| 93 | FCCU No. 1 | X | X | X | X | | X | | X |
| 161 | 301-B Reheat Heaters | X | X | X | X | | X | | |
| 162 | 302-B Reheat Heaters | X | X | X | X | | X | | |
| 164 | UU3 304-B Regeneration Flue Gas Heater | X | X | X | X | | X | | |
| 165 | UU3 305-B Hot Oil Heater | X | X | X | X | | X | | |
| 167 | UU3 306-B Preheat Heater | X | X | X | X | | X | | |
| 168 | 307-A/B Desulfurizer Heater | X | X | X | X | | X | | |
| 169 | UU3 308-B Process Heater | X | X | X | X | | X | | |
| 195-F | HUF Fugitives | X | | | | | | X | |
| 201 | ULC 100B Heater | X | X | X | X | | X | | |
| 202 | ULC 101B Heater | X | X | X | X | | X | | |
| 203 | ULC 102B Heater (2) | X | X | X | X | | X | | |
| 204 | ULC 103B Heater | X | X | X | X | | X | | |
| 205 | ULC 104BA Heater (2) | X | X | X | X | | X | | |
| 205 | ULC 104BB Heater (2) | X | X | X | X | | X | | |
| 206 | ULC 105BA Heater | X | X | X | X | | X | | |
| 206 | ULC 105BB Heater | X | X | X | X | | X | | |
| 280-4 | Tank 4 | X | | | | | | X | |
| 280-5 | Tank 5 | X | | | | | | X | |
| 280-11 | Tank 11 | X | | | | | | X | |
| 280-12 | Tank 12 | X | | | | | | X | |
| 280-13 | Tank 13 | X | | | | | | X | |
| 280-13A | Tank 13A | X | | | | | | X | |
| 280-14 | Tank 14 | X | | | | | | X | |
| 280-14A | Tank 14A | X | | | | | | X | |
| 280-16 | Tank 16 | X | | | | | | X | |
| 280-17 | Tank 17 | X | | | | | | X | |
| 280-18 | Tank 18 | X | | | | | | X | |
| 280-22 | Tank 22 | X | | | | | | X | |
| 280-23 | Tank 23 | X | | | | | | X | |
| 280-24 | Tank 24 | X | | | | | | X | |
| 280-25 | Tank 25 | X | | | | | | X | |
| 280-26 | Tank 26 | X | | | | | | X | |
| 280-27 | Tank 27 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-31 | Tank 31 | X | | | | | | X | |
| 280-32 | Tank 32 | X | | | | | | X | |
| 280-34 | Tank 34 | X | | | | | | X | |
| 280-37 | Tank 37 | X | | | | | | X | |
| 280-38 | Tank 38 | X | | | | | | X | |
| 280-41 | Tank 41 | X | | | | | | X | |
| 280-42 | Tank 42 | X | | | | | | X | |
| 280-43 | Tank 43 | X | | | | | | X | |
| 280-43A | Tank 43A | X | | | | | | X | |
| 280-44 | Tank 44 | X | | | | | | X | |
| 280-45 | Tank 45 | X | | | | | | X | |
| 280-46 | Tank 46 | X | | | | | | X | |
| 280-47 | Tank 47 | X | | | | | | X | |
| 280-48 | Tank 48 | X | | | | | | X | |
| 280-48A | Tank 48A | X | | | | | | X | |
| 280-49 | Tank 49 | X | | | | | | X | |
| 280-50 | Tank 50 | X | | | | | | X | |
| 280-51 | Tank 51 | X | | | | | | X | |
| 280-52 | Tank 52 | X | | | | | | X | |
| 280-53 | Tank 53 | X | | | | | | X | |
| 280-54 | Tank 54 | X | | | | | | X | |
| 280-55 | Tank 55 | X | | | | | | X | |
| 280-56 | Tank 56 | X | | | | | | X | |
| 280-57 | Tank 57 | X | | | | | | X | |
| 280-59 | Tank 59 | X | | | | | | X | |
| 280-60 | Tank 60 | X | | | | | | X | |
| 280-60A | Tank 60A | X | | | | | | X | |
| 280-61 | Tank 61 | X | | | | | | X | |
| 280-63 | Tank 63 | X | | | | | | X | |
| 280-64 | Tank 64 | X | | | | | | X | |
| 280-65 | Tank 65 | X | | | | | | X | |
| 280-66 | Tank 66 | X | | | | | | X | |
| 280-67 | Tank 67 | X | | | | | | X | |
| 280-71 | Tank 71 | X | | | | | | X | |
| 280-72 | Tank 72 | X | | | | | | X | |
| 280-73 | Tank 73 | X | | | | | | X | |
| 280-73A | Tank 73A | X | | | | | | X | |
| 280-80 | Tank 80 | X | | | | | | X | |
| 280-90 | Tank 90 | X | | | | | | X | |
| 280-91 | Tank 91 | X | | | | | | X | |
| 280-92 | Tank 92 | X | | | | | | X | |
| 280-93 | Tank 93 | X | | | | | | X | |
| 280-94 | Tank 94 | X | | | | | | X | |
| 280-95 | Tank 95 | X | | | | | | X | |
| 280-97 | Tank 97 | X | | | | | | X | |
| 280-98 | Tank 98 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|-----------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-100 | Tank 100 | X | | | | X | | | X |
| 280-103 | Tank 103 | X | | | | | | X | |
| 280-103A | Tank 103A | X | | | | | | X | |
| 280-104 | Tank 104 | X | | | | | | X | |
| 280-105 | Tank 105 | X | | | | | | X | |
| 280-106 | Tank 106 | X | | | | | | X | |
| 280-110 | Tank 110 | X | | | | | | X | |
| 280-117 | Tank 117 | X | | | | | | X | |
| 280-117A | Tank 117A | X | | | | | | X | |
| 280-118 | Tank 118 | X | | | | | | X | |
| 280-127 | Tank 127 | X | | | | | | X | |
| 280-128 | Tank 128 | X | | | | | | X | |
| 280-129 | Tank 129 | X | | | | | | X | |
| 280-130 | Tank 130 | X | | | | | | X | |
| 280-131 | Tank 131 | X | | | | | | X | |
| 280-140 | Tank 140 | X | | | | | | X | |
| 280-181 | Tank 181 | X | | | | | | X | |
| 280-269 | Tank 269 | X | | | | | | X | |
| 280-269A | Tank 269A | X | | | | | | X | |
| 280-270 | Tank 270 | X | | | | | | X | |
| 280-295 | Tank 295 | X | | | | | | X | |
| 280-296 | Tank 296 | X | | | | | | X | |
| 280-297 | Tank 297 | X | | | | | | X | |
| 280-298 | Tank 298 | X | | | | | | X | |
| 280-501 | Tank 501 | X | | | | | | X | |
| 280-502 | Tank 502 | X | | | | | | X | |
| 280-503 | Tank 503 | X | | | | | | X | |
| 280-504 | Tank 504 | X | | | | | | X | |
| 280-528 | Tank 528 | X | | | | | | X | |
| 280-529 | Tank 529 | X | | | | | | X | |
| 280-530 | Tank 530 | X | | | | | | X | |
| 280-531 | Tank 531 | X | | | | | | X | |
| 280-536 | Tank 536 | X | | | | | | X | |
| 280-560 | Tank 560 | X | | | | | | X | |
| 280-561 | Tank 561 | X | | | | | | X | |
| 280-652 | Tank 652 | X | | | | | | X | |
| 280-653 | Tank 653 | X | | | | | | X | |
| 280-1004 | Tank 1004 | X | | | | | | X | |
| 280-1004A | Tank 1004A | X | | | | | | X | |
| 280-1018 | Tank 1018 | X | | | | | | X | |
| 280-1020 | Tank 1020 | X | | | | | | X | |
| 280-1021 | Tank 1021 | X | | | | | | X | |
| 280-1023 | Tank 1023 | X | | | | | | X | X |
| 280-1024 | Tank 1024 | X | | | | | | X | |
| 280-1025 | Tank 1025 | X | | | | | | X | |
| 280-1039 | Tank 1039 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-1045 | Tank 1045 | X | | | | | | X | |
| 280-1046 | Tank 1046 | X | | | | | | X | |
| 280-1047 | Tank 1047 | X | | | | | | X | |
| 280-1048 | Tank 1048 | X | | | | | | X | |
| 280-1051 | Tank 1051 | X | | | | | | X | X |
| 280-1055 | Tank 1055 | X | | | | | | X | |
| 280-3010 | Tank 3010 | X | | | | | | X | |
| 280-4000 | Tank 4000 | X | | | | | | X | |
| 280-4011 | Tank 4011 | X | | | | | | X | |
| 280-4016 | Tank 4016 | X | | | | | | X | |
| 294-1 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-2 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-3 | Thermal Oxidizer | X | X | X | X | | | X | |
| 299-32 | Marine Dock | X | | | | | | X | |
| 299-33 | Marine Docks | X | | | | | | X | |
| 299-34 | Marine Docks | X | | | | | | X | |
| 299-37 | Marine Docks | X | | | | | | X | |
| 299-38 | Marine Docks | X | | | | | | X | |
| 311 | Refinery Flare No. 2 | X | X | X | X | X | | X | X |
| 321 | Refinery Flare No. 3 | X | X | X | X | X | | X | X |
| 331 | Refinery Flare No. 4 | X | X | X | X | X | | X | X |
| 351A | ULC Flare | X | X | X | X | X | | X | X |
| 381 | SRU A/B Flare | X | X | X | X | X | | X | X |
| 383 | SRU C/D Flare | X | X | X | X | X | | X | X |
| 384 | SRU Incinerator C and D | X | X | X | X | | X | | |
| 391 | DDU B-101/102 Heaters | X | X | X | X | | X | | |
| 392 | DDU B-201/202 Heaters | X | X | X | X | | X | | |
| 394 | DDU B-301 Heater | X | X | X | X | | X | | |
| 395 | DDU B-302 Reboiler | X | X | X | X | | X | | |
| 396A | DDU Flare | X | X | X | X | X | | X | X |
| 400 | Flare 8 | X | X | X | X | X | | X | X |
| 411 | Alky 2 Cooling Tower | X | | | | | X | | |
| 412 | Coker Cooling Tower | X | | | | | X | | |
| 413 | FCCU 1 Cooling Tower | X | | | | | X | | |
| 415 | FCCU 3 Cooling Tower | X | | | | | X | | |
| 416 | Power 3 Cooling Tower | X | | | | | X | | |
| 418 | ULC Cooling Tower | X | | | | | X | | |
| 419 | NDU Cooling Tower | X | | | | | X | | |
| 421 | UU3 Cooling Tower | X | | | | | X | | |
| 426 | CFHU Cooling Tower | X | | | | | X | | |
| 453 | Oil/Water Separator | X | | | | | | X | |
| 454 | Oil/Water Separator | X | | | | | | X | |
| 471 | CFHU Heaters 101-B and 102-B | X | X | X | X | | X | | |
| 480-1012 | Tank 1012 | X | | | | | | X | |
| 480-1013 | Tank 1013 | X | | | | | | X | |
| 481 | RHU Heaters Train 200 | X | X | X | X | | X | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 482 | RHU Heaters Train 300 | X | X | X | X | | X | | |
| 483 | RHU Heaters Train 400 | X | X | X | X | | X | | |
| 484 | RHU Fractionation Heaters | X | X | X | X | | X | | |
| 485 | RHU VRS Hot Oil Heater | X | X | X | X | | X | | |
| 501 | CFHU Flare 1 | X | X | X | X | X | | X | X |
| 550 | RDU Heater | X | X | X | X | | X | | |
| 551 | RDU Fugitives | X | | | | | | X | |
| E-02/03 | FCCU1 Waste Water Vent 3 | X | | | | | | X | |
| E-06 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-08 | Oil/Water Separator - FCCU 2 Unit | X | | | | | | X | |
| E-13 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-14 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-16 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-34 | Oil/Water Separator - RDU Unit | X | | | | | | X | |
| E-35 | Oil/Water Separator - CFHU Unit | X | | | | | | X | |
| E-48 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-63 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-68 | Lab Wastewater Collection Sump | X | | | | | | X | |
| E-69 | Environmental Facilities Sump | X | | | | | | X | |
| E-98 | Exchanger Pad Dry Weather Sump #30 | X | | | | | | X | |
| E-99 | Dry Weather Sump #33 | X | | | | | | X | |
| F-8 | Activated Sludge Unit No. 1 | X | | | | | | X | X |
| F-9 | Activated Sludge Unit No. 2 | X | | | | | | X | X |
| F-11 | Final Clarifier Tank No. 2 | X | | | | | | X | X |
| F-22 | Clarifier Effluent Tank | X | | | | | | X | X |
| F-30 | FCCU 3 Fugitives | X | | | | X | | X | X |
| F-30 | Final Effluent Tank | X | | | | | | X | X |
| F-60 | FCCU 2 Fugitives | X | | | | X | | X | X |
| F-90 | FCCU1 Fugitives | X | | | | X | | X | X |
| F-160 | UU3 Fugitives | X | | | | | | X | |
| F-200 | Ultracracker Fugitives | X | | | | X | | X | |
| F-270 | API Separator No. 3A | X | | | | | | X | |
| F-280 | Tank Farm Fugitives | X | | | | | | X | |
| F-294 | Marine Loading Fugitives | X | | | | | | X | |
| F-379 | Dock 54 Fugitives | X | | | | | | X | |
| F-380 | SRU Fugitives | X | | | | X | | | |
| F-390 | DDU 100/200 Fugitives | X | | | | X | | X | |
| F-393 | DDU 300 Fugitives | X | | | | X | | X | X |
| F-400 | Flare 8 Fugitives | X | | | | X | | X | |
| F-470 | CFHU Fugitives | X | | | | X | | X | |
| F-480 | RHU Fugitives | X | | | | | | X | |
| F-486 | HRU Fugitives | X | | | | X | | X | |
| F-490 | Acid Plant H ₂ S Feed | X | | | | | | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|--------|------------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| F-491 | Acid Plant Sludge Feed | X | | | | | | | |
| FLR-SW | SRU Sour Water System Flare | X | X | X | X | X | | X | X |
| W-01 | Oil/Water Separator - UU4 Unit | X | | | | | | X | |
| W-02 | Oil/Water Separator - DDU Unit | X | | | | | | X | |
| W-06 | Oil/Water Separator - ULC/ARU Unit | X | | | | | | X | |
| W-07 | Oil/Water Separator - ULC Unit | X | | | | | | X | |
| W-12 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |
| W-13 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |

X Emissions from this EPN are included in both the initial and final emission cap.

- (1) Facility does not participate in normal operation annual cap for VOC, PM₁₀, or CO. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.
- (2) Facility does not participate in normal operation annual cap for VOC, NO_x, CO, SO₂, or PM₁₀. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.

Dated December 13, 2011

4/11/978
(2013)

AIR, PESTICIDES, AND TOXICS 6TH FLOOR RECORDS CENTER INFILING / NEW FILE FORM

New File ☐

OR

Infiling ☒

Choose from the file types below:

AIR FACILITY:☐ AR - Acid Rain☐ CB - Confidential Business☐ CO - Compliance☐ EN - **Enforcement☐ GE - General☒ PE - Permit☐ RA - Regulatory Applicability☐ Other _____**TSCA:**☐ AH - Asbestos Hazard Emergency Response Act☐ AS or AW - Asbestos or Asbestos Worker Protection☐ CB - Confidential☐ FI - Site Specific☐ FO - Non Site Specific☐ IM - **Section 5 & 8☐ LB - **Lead☐ PC - **PCB** Extension of file type (if needed): ☐ ES - Enforcement Sensitive☐ DO - Docket Number**EPCRA/SARA** ☐**FIFRA** ☐*EPA Registry I.D.*Current FRS Number:
(Found in EnviroFacts)110000463784

Facility Name & Physical Address:

Blanchard Refining Co.
Galveston Bay Refinery2401 5th Ave. SouthTexas City, Tx, 77590 8349

Remarks:

aka: BP Chemical Plant Texas*City*

Requestor's Name & Phone Number:

Les KovalX6733

Program Management Files:

A current listing of these file types and their numeric codes are located in a blue binder on the top shelf of the "APT" file cabinet in the 9th Floor Records Center.

AIRS - Aerometric Information Retrieval System

ATO - Air Toxics

EMR - Emergency Response

ENF - Enforcement -

ENF 5-5-1 requires Month and Fiscal Year accompany file code.

ENF 5-6-5 requires Fiscal Year accompany file code.

EXR - External Relations

GEO - Geographical Summary Data

GRA - Grants Administration

The majority of this section requires the Fiscal Year accompany file code.

Project Officer Grants require the Grant number and Fiscal Year accompany file code.

LAB - Laboratory Support

LBP - Lead Based Paint

LBP 12-3 requires the facility name in which document refers to be either highlighted or circled on the top page.

LEL - Legal and Legislative

MON - Monitoring NES - National Emission Standards

NSP - New Source Performance

NSR - New Source Review

OPP - Operating Permits Program

PEA - Permits Administration Program

PES - Pesticides

PLA - Planning

PUA - Public Affairs

RAD - Radiation

RCR - Resource Conservation and Recovery Act - Regulatory Development

RDE - Research and Development

REG - Registration

SIP - State Implementation Plan

SUP - Superfund

TITL - Title III

TSC - Toxic Substance Control

TSC 1-1-4 requires the facility name in which document refers to be either highlighted or circled on the top page.

TSU - Technical Support

VRP - Voluntary Reduction Program

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*



EPA

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 15, 2013

MR RAY BROOKS
VICE PRESIDENT
BLANCHARD REFINING COMPANY LLC
2401 5TH AVE S
TEXAS CITY TX 77590-8349

Re: Permit Amendment and Alteration Applications
Permit Number: 47256
Galveston Bay Refinery
Texas City, Galveston County
Regulated Entity Number: RN102535077
Customer Reference Number: CN604166868
Account Number: GB-0004-L
Associated Permit Number: PSDTX402M3

RECEIVED
13 FEB 27 AM 9:56
AIR PERMITS SECTION
SPD-R

Dear Mr. Brooks:

This is in response to your letters received on September 7, 2012 and October 24, 2012 with your Forms PI-1 (General Application for Air Preconstruction Permits and Amendments) concerning the proposed amendments to Flexible Permit Number 47256. We understand that you propose to replace the thermal oxidizer at dock 54E and update the representations and change the service for tank 117. This is also in response to permit alterations requests in letters received on December 18, 2012 and January 22, 2013 proposing to revise Special Condition 45.A and delete emission point number (EPN) 486 from the Maximum Allowable Emission Rate Table (MAERT).

As indicated in Title 30 Texas Administrative Code § 116.721(a) [30 TAC § 116.721(a)], and based on our review, Flexible Permit Number 47256 is hereby amended. Your alterations requesting to revise Special Condition 45.A and that EPN 486 be removed from the MAERT have also been approved. This information will be incorporated into the existing permit file. Enclosed are revised special conditions pages, a MAERT, and a new permit face to replace those currently attached to your permit. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met.

Planned maintenance, startup, and shutdown emissions have been previously reviewed, authorized, and included in the MAERT. Any other maintenance activities are not authorized by this permit and will need to obtain a separate authorization.

Mr. Ray Brooks
Page 2
February 15, 2013

Re: Permit Number: 47256

These amendments will be automatically void upon the occurrence of any of the following, as indicated in 30 TAC § 116.120(a):

1. Failure to begin construction of the changes authorized by this amendment within 18 months from the date of this authorization.
2. Discontinuance of construction of the changes authorized by this amendment for a period of 18 consecutive months or more.
3. Failure to complete the changes authorized by this amendment within a reasonable time.

Upon request, the executive director may grant extensions as allowed in 30 TAC § 116.120(b).

The limitations of 30 TAC § 116.120(a) do not apply to physical or operational changes allowed without an amendment under 30 TAC § 116.721 of this title (relating to Amendments and Alterations). [30 TAC § 116.715(c)(1)]

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the executive director's decision. Any motion must explain why the commission should review the executive director's decision. According to 30 TAC § 50.139, an action by the executive director is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 11 copies of a motion must be filed with the Chief Clerk in person, or by mail to the Chief Clerk's address on the attached mailing list. On the same day the motion is transmitted to the Chief Clerk, please provide copies to the applicant, the executive director's attorney, and the Public Interest Counsel at the addresses listed on the attached mailing list. If a motion to overturn is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the executive director's approval. According to Texas Health and Safety Code § 382.032, a person affected by the executive director's approval must file a petition appealing the executive director's approval in Travis County district court within 30 days after the **effective date of the approval**. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Dr. Kurt Kind, Ph.D., P.E. at (512) 239-1337 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Ray Brooks
Page 3
February 15, 2013

Re: Permit Number: 47256

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Wilson".

Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

MPW/kk

Enclosures

cc: Director, Office of Environmental Health Pgm Air & Water Pollution Svc, Galveston
County Health District, La Marque
Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review, Section (6PD-R), U.S. Environmental
Protection Agency, Region 6, Dallas

Project Number: 182601, 184455, 186540, & 188428



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT

A Flexible Permit Is Herby Issued To
Blanchard Refining Company LLC
Authorizing the Construction and Operation of
Galveston Bay Refinery
Located at Texas City, Galveston County, Texas
Latitude 29° 21' 38" Longitude 94° 55' 14"



Permit: 47256 and PSDTX402M3

Amendment Date: February 15, 2013

Renewal Date: July 13, 2015


For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the executive director of the Texas Commission on Environmental Quality (commission) to amend this permit in that regard and such amendment is approved. It shall be unlawful for any person to vary from such representation or flexible permit provision if the change will cause a change in the method of control of emissions, the character of the emissions, or will result in a significant increase in emissions, unless application is made to the executive director to amend the flexible permit in that regard and such amendment is approved by the executive director. [Title 30 Texas Administrative Code 116.721 (30 TAC 116.721)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** The start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.715(c)(2)]
4. **Start-up Notification.** The appropriate regional office of the commission and any local program having jurisdiction shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. Phased construction, which may involve a series of facilities commencing operations at different times, shall provide separate notification for the commencement of operations for each facility. Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).
5. **Sampling Requirements.** If sampling of stacks or process vents is required, the flexible permit holder shall contact the commission's Engineering Services Section, Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the appropriate regional office of the commission. The flexible permit holder is also responsible for providing

sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.715(c)(4)]

6. **Equivalency of Methods.** It shall be the responsibility of the flexible permit holder to demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the flexible permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.715(c)(5)]
7. **Recordkeeping.** A copy of the flexible permit along with information and data sufficient to demonstrate continuous compliance with the emission caps and individual emission limitations contained in the flexible permit shall be maintained in a file at the plant site and made available at the request of personnel from the commission or any air pollution control program having jurisdiction. For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the permit holder in the permit application. This information may include, but is not limited to, emission cap and individual emission limitation calculations based on a 12-month rolling basis and production records and operating hours. Additional recordkeeping requirements may be specified in special conditions attached to the flexible permit. Information in the file shall be retained for at least two years following the date that the information or data is obtained. [30 TAC 116.715(c)(6)]
8. **Maximum Allowable Emission Rates.** A flexible permit covers only those sources of emissions and those air contaminants listed in the table entitled "Emission Sources, Emissions Caps and Individual Emission Limitations" attached to the flexible permit. Flexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit. [30 TAC 116.715(c)(7)]
9. **Emission Cap Readjustment.** If a schedule to install additional controls is included in the flexible permit and a facility subject to such a schedule is taken out of service, the emission cap contained in the flexible permit will be readjusted for the period the unit is out of service to a level as if no schedule had been established. Unless a special provision specifies the method of readjustment of the emission cap, a permit alteration shall be obtained. [30 TAC 116.715(c)(8)]
10. **Maintenance of Emission Control.** The facilities covered by the flexible permit shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. Notification for emissions events and scheduled maintenance shall be made in accordance with 30 TAC 101.201 and 101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping). [30 TAC 116.715(c)(9)]
11. **Compliance with Rules.** Acceptance of a flexible permit by a permit applicant constitutes an acknowledgment and agreement that the holder will comply with all Rules, Regulations, and Orders of the commission issued in conformity with the Texas Clean Air Act (TCAA) and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or flexible permit condition are applicable, then the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the flexible permit. [30 TAC 116.715(c)(10)]
12. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
13. **There** may be additional special conditions attached to a flexible permit upon issuance or amendment of the permit. Such conditions in a flexible permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.715(d)]
14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
15. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Special Condition Nos. 5 through 56 apply to the normal operations of the facilities authorized under this permit. Special Condition Nos. 57 through 68 apply to the planned maintenance, startup, and shutdown activities authorized by this permit.

Emission Caps and Individual Limitations

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Emission Caps and Individual Emission Limitations," (ECIELT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the ECIELT and other requirements specified in the special conditions.

Planned startup and shutdown emissions due to the activities identified in Special Condition No. 57 are authorized from facilities and emission points identified in Attachment D in other construction permits at the site provided the facility and emissions are compliant with the respective ECIELT and special conditions, or Special Condition No. 66 of this permit. **(8/10)**

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U. S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, and:
 - A. Sulfuric Acid (H_2SO_4) Production Units, Subpart Cd;
 - B. H_2SO_4 Plants, Subpart H;
 - C. Petroleum Refineries, Subpart J (**per Agreed Order Docket No. 2005-0224-AIR-E**);
 - D. Storage Vessels for Petroleum Liquids, Subpart K;
 - E. Volatile Organic Liquid Storage Vessels, Subpart Kb; and
 - F. Equipment Leaks of Volatile Organic Compounds (VOC) in Petroleum Refineries, Subpart GGG. **(8/10)**

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

3. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) in 40 CFR Part 61, Subparts A, and:
 - A. Equipment Leaks of Benzene, Subpart J;
 - B. Equipment Leaks, Subpart V;
 - C. Benzene Transfer Operations, Subpart BB; and
 - D. Benzene Waste Operations, Subpart FF.
4. These facilities shall comply with all applicable requirements of EPA regulations on NESHAPS in 40 CFR Part 63, Subparts A, and:
 - A. Petroleum Refineries, Subparts CC;
 - B. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recover Units, Subpart UUU; and
 - C. Marine Vessel Loading Operations, Subpart Y.

Operational Limitations, Work Practices, and Plant Design

5. Storage tanks are subject to the following requirements: The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
 - A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal. Installation of equivalent control requires prior review and approval by the Texas Commission on Environmental Quality (TCEQ) Executive Director.
 - B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

- C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
- D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (API) Code 650, or an equivalent degree of flotation, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

The floating roof design for all new or retrofitted roofs shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 or later except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

- E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum except where a dark color is necessary to help the tank absorb or retain heat in order to maintain the material in the tank in a liquid state. The following existing tanks are exempt from the white or aluminum requirement: Fixed-Roof Tanks 41, 42, 59, 60, 60A, 73, 73A, 1012, and 1013. Storage tanks must be equipped with permanent submerged fill pipes.
 - F. The permit holder shall maintain records which includes tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. (8/10)
6. Pressure tanks shall be maintained such that there are no emissions of VOC to the atmosphere during normal operating conditions (including filling operations). If emissions

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

occur during normal operations, they shall be routed to a flare which achieves at least 98 percent destruction efficiency.

7. Marine vessel loading operations at this facility are limited to the handling of gasolines, gasoline blending components, gasoline boiling range products, toluene, benzene, distillates, and black oils. Benzene shall only be loaded at one dock at any time. (2/13)
8. Loading emissions from marine loading operations at Dock 54E shall be routed to a thermal oxidizer (EPN 1300) which shall operate at a minimum VOC destruction efficiency of 99.9 percent by weight. The thermal oxidizer firebox temperature shall be maintained at not less than 1800°F on a six minute average period while loading emissions are directed to the oxidizer. After the initial stack test has been completed, the six minute average temperature shall be maintained greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 39.

The thermal oxidizer temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^\circ\text{C}$.

Quality assured (or valid) data must be generated when the thermal oxidizer is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the thermal oxidizer operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (2/13)

9. Loading emissions from marine loading operations at docks other than Dock 54E shall be routed to thermal oxidizers (EPNs 294-1, 294-2, and 294-3) which shall operate at a minimum VOC destruction efficiency of 99 percent by weight. During loading operations, the minimum operating temperature of the thermal oxidizers shall be 1250°F. Records of thermal oxidizer operating temperatures shall be kept for each loading operation. (2/13)
10. Loading rates at the marine docks other than Dock 54 shall be reduced as needed in the event that two of the thermal oxidizers are inoperable. Loading of hydrocarbons with a true vapor pressure of greater than or equal to 0.5 psia at maximum temperature shall cease in the event that all thermal oxidizers are inoperable. Records shall be kept for each

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

- loading operation and shall include the name and quantity of material loaded. Operation without visible liquid leaks or spills shall be maintained at all loading/unloading facilities, regardless of vapor pressure. (2/13)
10. Marine dock thermal oxidizers other than at Dock 54 (EPNs 294-1, 294-2, and 294-3) shall operate with greater than a stoichiometric quantity of air at all times. (2/13)
 11. The holder of this permit shall maintain marine vessel loading equipment in such a manner that vapor-tight connections are made between the dock and the marine vessel. A blower system shall be installed which will produce a vacuum during vapor controlled loading operations (liquid VOC vapor pressure greater than or equal to 0.50 psia). Should the blower system cease operating for any reason, loading operations shall cease immediately. The vacuum system shall be repaired before loading operations can resume. A pressure/vacuum gauge shall be installed such that a negative pressure can be verified in the vessel and/or compartment being loaded. The vacuum shall be recorded every 15 minutes when loading. A vacuum of at least three inches of water shall be maintained during loading. Records of all blower system repairs and associated downtime shall be maintained. (2/13)
 12. The marine dock thermal oxidizers shall be equipped with an automatic ignition system that assures gas ignition before loading and provides immediate notification of appropriate personnel when the ignition system ceases to function.
 13. Uncontrolled loading of marine vessels without the use of vapor control is allowable under this permit for those materials that have a true vapor pressure of less than 0.50 psia at the actual loading temperature, provided that all applicable federal and state rules and regulations are met.
 14. All flares shall be designed and operated in accordance with the following requirements:
 - A. The combined refinery fuel natural gas and waste stream to the flare shall meet the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Compliance with this condition shall be demonstrated by monitoring required in Paragraph D of this condition. Flare testing per 40 CFR § 60.18(f) may be requested by the TCEQ Houston Regional Office, in addition to New Source Performance Standards (NSPS) or federal requirements, to demonstrate compliance with this condition. Testing to confirm the heating value (Btu per standard cubic feet [scf]) may be requested by the TCEQ Houston Regional Office to demonstrate compliance with this condition.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

- B. The flare(s) shall be operated with a pilot flame present at all times and have a constant pilot flame or an automatic re-ignition system. The pilot flame shall be monitored by a thermocouple or an infrared monitor.
- C. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare (for steam-assisted flares). The permit holder shall ensure proper flare operation through monitoring by Paragraph D of this condition.
- D. The holder of this permit shall install a continuous flow monitor that provides a record of the vent stream flow to the flare. The flow monitor sensor should be installed in the vent stream such that the total vent stream to the flare is measured. The average hourly values of the flow shall be recorded and maintained electronically. The holder of this permit shall provide the daily average flow rate (24-hour average) to each flare. These monitors shall be operational no later than July 13, 2010.

The holder of this permit shall conduct an analysis (grab sample) of the flare composition (total VOC, benzene, hydrogen sulfide (H_2S), and Btu content) on or before May 31, 2007. The analysis shall be conducted on a semiannual basis (once during the summer months and once during the winter months). The holder of this permit may submit a request to the TCEQ Houston Regional Office to reduce the sampling frequency. The sampling shall be conducted such that the total vent stream to the flare is included in the analysis. Records of the grab sampling results, including flare identification number, sampling date, sampling location, flare composition, and calculated net heating value in Btu/scf for each flare, shall be maintained. **(PSD) (9/06)**

- 15. Safety relief valves that discharge to the atmosphere only as a result of fire shall be equipped with a rupture disc and pressure gauge. The pressure gauge shall be installed between the relief valve and the rupture disc to monitor disc integrity.

Atmospheric relief valves which are not equipped with a rupture disc shall be monitored for leaks on a quarterly basis with an approved gas analyzer beginning no later than July 13, 2007. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves which are not equipped with a rupture disc and pressure gauge or pressure transmitting device.

All leaking discs shall be replaced at the earliest opportunity, but no later than the next unit shutdown. Discs to be replaced shall be identified on an equipment list, and this list shall be made available to TCEQ or local air pollution control program representative.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

Records of quarterly atmospheric relief valve monitoring results, including the relief valve identification, monitoring date, monitoring result, disk replacement or installation date, and next unit shutdown date after leak discovery shall be maintained. **(8/10)**

Sulfur Recovery/Amine Treating Units

16. The minimum sulfur recovery efficiency for these permitted units shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered}) * (100)}{(\text{S acid gas})}$$

Where:

| | | |
|-------------|---|---|
| Efficiency | = | sulfur recovery efficiency, percent |
| S recovered | = | (S acid gas - S stack, or S produced), long tons per day (LTPD) |
| S acid gas | = | (S recovered plus S stack), LTPD |
| S stack | = | sulfur in incinerator stack, LTPD |

The average sulfur emission reduction efficiency (sulfur recovery efficiency) shall be demonstrated for each 24-hour period by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide (SO₂) monitor, sulfur production records, stack mass flow rate, and other process flow data. Records of the calculated recovery efficiency, sulfur in the incinerator stack, sulfur produced, sulfur in the acid gas, the compliance calculations, and a detailed example of the compliance calculations shown above shall be maintained on-site. The sulfur recovery efficiency of this condition is not applicable during start-up, shutdown, or upset conditions if proper procedures of 30 TAC Chapter 101 are followed. **(PSD)**

17. The total sulfur recovered from the combined SRU Trains (Trains 1 through 4) shall not exceed 1300 LTPD of sulfur (based on a 24-hour period). At no time during normal operation shall the excess capacity be less than 75 percent redundancy. **(PSD)**
18. The SRU thermal reactors that receive ammonia acid gas from the sour water stripper overheads shall at all times be operated with a stable flame, and the SRUs shall operate with a flame temperature within recommended design specifications, but shall operate at no less than 2000°F. The flame temperature of each SRU thermal reactor shall be continuously monitored and recorded.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 8

19. All acid gas streams from the amine regeneration units, and sour water stripper overheads, containing H_2S shall be routed to the SRUs or other process units under normal operating conditions. It is not permissible under any conditions to vent acid gases directly to the atmosphere. **(PSD)**
20. Emissions from the sulfur pits, sulfur storage, and sulfur loading operations shall be collected by a vapor collection system and routed either back to the SRU thermal reactor or to the SRU Tail Gas Incinerator (TGI). **(PSD)**
21. The minimum firebox chamber temperatures in the SRU TGIs shall not go below 1200°F during normal operating conditions. If stack testing in the TGI exhaust indicates that a higher temperature is necessary to obtain a minimum H_2S and VOC destruction efficiency of 99.9 percent, then the temperature obtained during the stack test will become the new minimum incinerator firebox chamber temperature. The firebox temperature of each TGI shall be continuously monitored and recorded.
22. The SRU TGIs shall operate with no visible emissions except for uncombined steam.
23. Contingency Plan for the SRU

Should there be loss of sulfur recovery potential from the Claus trains, TGTU, or TGIs, any combination of the following steps shall be taken as soon as possible, but no later than two hours from the start of the event:

- A. Reroute the maximum amount of acid gas to the operating SRUs or equipment (such as the remaining sulfur recovery trains, TGTU, and TGI). This action can include increasing the oxygen (O_2) injection rate to add SRU capacity.
- B. Reroute any remaining acid gas to the TGIs. If the TGIs are not operable, the acid gas should be routed to the emergency flares.
- C. Shut down the sour water strippers and accumulate sour water in tankage for future processing.
- D. Reduce production, reduce charge rates at upstream units, and switch to lower-sulfur purchased gas oils and crude oils as necessary to reduce the amine loading and cease acid gas flaring within eight hours of the event. This action may include shutting down one and/or all units which supply acid gas to the SRU complex.
- E. Any other action not listed that will allow the SRU to recover from the loss of sulfur recovery potential. All actions conducted under this paragraph shall be documented.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 9

The documentation shall include the specific action taken, time the action was taken, affect on upstream/downstream facilities (heaters, other control devices, etc), and overall affect on emissions from the SRU or other facilities. This documentation shall be included in any reports submitted to the TCEQ Houston Regional Office or local air pollution control program representative. This information shall also be maintained on site and made available to TCEQ or local air pollution control program representatives upon request.

The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.

24. Records shall be maintained for all SRU, Tail Gas Treating Unit (TGTU), and TGI downtime. These records shall include the date and duration of downtime, amount of bypassed acid gas flared, the cause of the downtime, and corrective action taken. The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.
25. The sour water stripper system feeding the SRUs shall have a minimum on-line retention and separation (hold up) time of three days based on normal operational levels and maximum expected feed rates.
26. The retention time of the rich amine and lean amine drums shall meet at least 30 minutes of retention at maximum production levels.

FCCUs

27. The final emission caps are based on FCCUs 1 and 3 (Emission Point Nos. [EPNs] 93 and 34) meeting the following concentrations, averaged over a one-hour period.

| | |
|-----------------------------------|----------|
| carbon monoxide (CO) | 500 ppmv |
| SO ₂ | 200 ppmv |
| nitrogen oxide (NO _x) | 200 ppmv |
| VOC | 10 ppmv |

The initial emission caps are based on the following: 500 ppmv CO, and 300 ppmv SO₂ from FCCU 1, and 500 ppmv CO from FCCU 3. **(PSD) (10/10)**

28. The final emission caps are based on the FCCU 1 stack meeting 1.0 pound of particulate matter (PM) per 1,000 pounds of coke burn-off. The final hourly emission cap and individual annual emission limit for FCCU 3 are based on the FCCU stack meeting 0.914

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 10

pounds of PM per 1,000 pounds of coke burn-off. The individual hourly and annual emission limits for FCCU 3 are based on the FCCU 3 stack meeting 0.33 pounds of H₂SO₄ per 1,000 pounds of coke burn-off. The PM and H₂SO₄ emissions will be measured per the EPA Methods 5B and 8/TCEQ 24 or other applicable method approved by the TCEQ).
(PSD) (12/11)

29. For the final ammonia emission cap, the FCCU 1 electrostatic precipitator shall not exceed 10 ppmv ammonia slip. The ammonia injection rate to the FCCU shall be continuously monitored and recorded. **(12/11)**
30. The opacity of emissions from the FCCUs shall not exceed 20 percent averaged over a six-minute period, as determined by an opacity monitoring device or trained observer, except as provided for in 30 TAC § 111.111(a)(1)(E).
31. The seven-day rolling average of NO_x and SO₂ concentration limits below shall not apply during periods of start-up, shutdown, or malfunction. **(10/10)**

A. FCCU 1 NO_x Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a NO_x limit of 40 ppmvd at zero percent O₂ on a 365-day rolling average and 80 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average NO_x limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

B. FCCU 3 NO_x Concentration Limits

If the permit holder has installed a selective catalytic reduction (SCR) unit on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 20 ppmvd at zero percent O₂ on a 365-day rolling average and 40 ppmvd at zero percent O₂ on a 7-day rolling average basis.

If the permit holder has not installed an SCR on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 30 ppmvd at zero percent O₂ on a 365-day rolling average and 60 ppmvd at zero percent O₂ on a 7-day rolling average basis.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 11

The seven-day rolling average may increase temporarily to 120 ppmvd if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder submits and EPA approves a report detailing reasons for the outage(s) of the SCR or NO_x control device within 30 days after the outage occurs. The outages can only be due to reasons other than startup, shutdown or malfunction.

C. FCCU 1 SO₂ Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a SO₂ limit of 50 ppmvd at zero percent O₂ on a 365-day rolling average and 150 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average SO₂ limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

D. FCCU 3 SO₂ Concentration Limits

Beginning July 1, 2007, FCCU 3 (EPN34) shall comply with a SO₂ limit of 25 ppmvd at zero percent O₂ on a 365-day rolling average and 50 ppmvd at zero percent O₂ on a 7-day rolling average basis.

32. The FCCU 3 Regenerator Scrubber (EPN 34) liquid to gas ratio and gas pressure drop shall be continuously monitored and be maintained greater than the minimum one hour average value observed in the last satisfactory stack test performed in accordance with Special Condition 39. The initial stack test for EPN 34 was completed on May 6, 2008. A subsequent stack test will be performed in accordance with Special Condition 39 upon completion of the FCCU 3 Regeneration Project proposed in the amendment, PI-1 dated April 26, 2011.

The flow rates and pressures shall be recorded every 6 minutes as six minute averages and the pH shall be recorded every 15 minutes as 15 minute averages. Each flow and pressure monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 12

Quality assured (or valid) data must be generated when the FCCU is operating except during the performance of a daily zero and span check, if conducted. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the FCCU operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (12/11)

Fired Units (Heaters and Boilers)

33. The final emission caps are based on fuel gas (used to fire all heaters, boilers, oxidizers, incinerators, flares, and other combustion devices) having an H₂S concentration of 162 ppmv or 0.1 grain per dry standard cubic foot on a one-hour average basis. The H₂S concentration in the fuel gas system shall be continuously monitored and recorded. (PSD) (10/10)
34. The opacity from all heaters, boilers, etc., shall not exceed 5 percent averaged over a six-minute period, except for those periods described in 30 TAC § 111.111(a)(1)(E).
35. The final emissions cap is based on a combined average NO_x emission value of 0.035 lb NO_x/MMBtu from all boilers and heaters.
36. The UC-103B is limited to firing no more than 99 MMBtu/hr. Records verifying the firing rate for this unit shall be maintained on-site.

Wastewater

37. Emissions from wastewater process equipment shall be controlled as follows:
 - A. Emissions from the dissolved air flotation, gravity thickener, and API No. 2 shall be routed to a thermal oxidizer capable of obtaining a VOC destruction efficiency of 99.9 percent.
 - B. Emissions from APIs 1 and 3 shall be routed to a carbon adsorption system. The carbon adsorption system shall be installed and operating no later than July 13, 2010. The carbon adsorption system shall meet the requirements of Special Condition No. 47 of this permit.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 13

- C. Wastewater process equipment upstream of the biological treatment units (activated sludge) shall either be covered and/or routed to a control device (either a thermal oxidizer, flare, or carbon canister system). **(10/10)**

Initial and Periodic Sampling Requirements

38. Sampling port(s) and platforms(s) shall be incorporated into the design of the combustion source stack(s) per specifications in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Platform(s) will not be necessary for existing stacks of combustion facilities that will not be equipped with continuous emissions monitoring system (CEMS) and do not currently have platform(s) included in their design. Alternate sampling facility designs may be submitted for approval by the Executive Director of the TCEQ.
39. The holder of this permit shall perform stack sampling and other testing, as required, to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the following sources:

| |
|---|
| FCCU 1 and 3 Stacks (EPNs 93 and 34) |
| SRU TGI exhausts before the Common Stack (EPN 384) |
| Marine Dock Thermal Oxidizers (EPNs 294-1, 294-2, 294-3, and 1300) |
| All boilers and heaters with firing rates of 40 MMBtu/hr or greater |
| In addition, common stacks (if any) containing units capable of 40 MMBtu/hr or greater shall also be sampled. |

The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Air Permits Division. Test waivers and alternate/equivalent procedure proposals for 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 14

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Houston Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the listed sources to be tested for include (but are not limited to) the following:

| | |
|---------------------------------------|---|
| FCCU | NO _x , CO, SO ₂ , VOC, TSP*, PM ₁₀ *, ammonia (FCCU 1 only), H ₂ SO ₄ , and O ₂ |
| SRU TGI(s) | SO ₂ , H ₂ S, H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Boilers, Heaters, Furnaces, etc | SO ₂ , H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Marine Dock Thermal Oxidizers | NO _x , CO, VOC, and O ₂ |
| Units equipped with ammonia injection | ammonia |

* TSP - total suspended particulate

* PM₁₀ - particulate matter equal to or less than 10 microns in diameter

- C. Sampling shall occur within 60 days after achieving the maximum production rate at which the facility will be operated, but no later than 180 days after start-up following modification or installation of a emission source (facility), or within 60 days after achieving normal operation (for those units being restarted due to Hurricane Rita), and other such times as determined necessary to verify compliance with the emissions cap as required by the TCEQ Houston Regional Director or the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the TCEQ Houston Regional Office.

The permit holder may submit a request to perform representative sampling for combustion units that are similar in function, heat input, etc. The request shall be submitted to, and approved by, the TCEQ Houston Regional Office before sampling begins.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 15

- D. The EPN being tested shall operate at maximum production, loading, or firing rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the EPN is unable to operate at maximum rates during testing, then additional stack testing may be required when higher firing rates are achieved. (Additional testing will not be required if the EPN is equipped with a CEMS.)
- E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed to the TCEQ Houston Regional Office.
- F. Stack sampling for those units which are not equipped with a CEMS shall be repeated every five years after the initial sampling in conformity with A, B, and D of this condition. Facilities which are not being modified and have been tested in the last five years shall be tested within five years of the last test date (even if those sources have not been tested for VOC during previous tests).
- G. For fired units equipped with ammonia injection, the initial compliance stack test shall test for the presence of ammonia slip in the stack. After the initial stack test, grab samples for ammonia shall be conducted weekly during the first 60 days of operation. After operating procedures have been developed to prevent excess amounts of ammonia from being injected, the frequency of ammonia grab sampling can be reduced to a quarterly basis. If the grab samples exceed 10 ppmv at any time, the holder of this permit shall return to weekly ammonia sampling until such time as repairs are conducted, or the sampling indicates that the ammonia slip is 5 ppmv or less.
- H. The two FCCUs shall be stack sampled for the presence of H_2SO_4 within 60 days after achieving normal operation (after the restart due to Hurricane Rita). The holder of this permit shall submit a permit amendment application within 60 days of completing the stack sampling of the FCCUs to incorporate the H_2SO_4 into an emissions cap, or list the H_2SO_4 emissions as an individual emission limitation. If necessary, the holder of this permit shall include netting calculations, and/or Prevention of Significant Deterioration forms, tables, etc. in the amendment package. The amendment package shall include all calculations, assumptions, best available control technology (BACT) determinations, and a proposal for determining compliance with the short-term and annual emission rate or caps. FCCU 3 satisfied this condition with the PSD amendment application (PI-1 dated April 26, 2011).
(PSD) (2/13)

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 16

40. The holder of this permit shall submit a sampling and testing plan to the TCEQ Houston Regional Office (with a copy routed to the TCEQ Air Permits Division) for review and approval no later than September 13, 2005.

The sampling plan shall specify the sampling methods and other testing, as necessary, to establish the emissions (lb/hr and TPY) of VOC being emitted to the atmosphere from the wastewater system associated with this permit. Sampling and testing shall begin within 60 days of plan approval.

Within 30 days after completion of the sampling, copies of the sampling report shall be submitted to the following:

One copy to the TCEQ Air Permits Division, Austin.

One copy to the TCEQ Houston Regional Office.

Sampling of the wastewater system, as specified in this section, is waived if the permit holder determines that sufficient information is currently available to adequately model the wastewater treating system through the use of Water 8 or Water 9 wastewater model. The applicant shall submit revised emission calculations using one of these models, to the Air Permits Division for review and approval, no later than September 13, 2005 and one of the following permit applications.

- A. If the wastewater models show a decrease in the emission contribution from the wastewater treating facilities compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit alteration to adjust emissions cap to reflect the emissions obtained from the use of the water models.
- B. If the wastewater models show an increase in emissions compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit amendment to increase the final emissions cap. **(8/10)**

Ongoing Monitoring Requirements

41. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentrations of the following compounds from all of the following facilities by December 31, 2005: **(10/10)**

- A. FCCU Stacks (EPNs 93 and 34): SO₂, NO_x, CO, Opacity, and O₂

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 17

- B. SRU TGI Stacks (EPNs 384): SO₂ and O₂.
 - C. A CEMS to measure and record the in-stack concentrations of NO_x, CO, and O₂ shall be operational and used to monitor emissions from any boiler, heater, or combustion device with a maximum firing rate greater than or equal to 100 MMBtu/hr.
42. Each CEMS required by these conditions shall comply with the following:
- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Air Permits Division for requirements to be met.
 - B. Paragraph B(1) of this condition applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Paragraph B(2) of this condition applies to all other sources:
 - (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the TCEQ Houston Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Houston Regional Director.
 - (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 18

the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly averages concentrations at least once everyday, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of lb/hr at least once every week as follows:

The measured hourly average concentration from the CEMS shall be multiplied by the exhaust gas flow rate of the source (measured by true exhaust flow meters, or measured during the latest stack test performed in accordance with Special Condition No. 39, or calculated using fuel flow meters required by §117.340) to determine the hourly emission rate.

- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The TCEQ Houston Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.
- F. Quality-assured (or valid) data must be generated when the facility generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Houston Regional Director. **(PSD) (8/10)**

43. Boilers, heaters, etc., with maximum firing rates of greater than or equal to 40 MMBtu/hr and less than 100 MMBtu shall be sampled in accordance with this condition. The terms of this condition are effective upon implementation of BACT for a particular device or for combustion devices for which additional controls are not anticipated no later than July 13, 2006.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 19

After completion of the initial stack test, the holder of this permit shall conduct annual stack tests for NO_x and CO. The stack test shall be comprised of no less than the average of three one-hour readings for each pollutant.

The results of the stack test shall be recorded in terms of ppm and converted into values of lb/hr and TPY within 30 days of sampling (unless a mass emission rate can be estimated at the time of the test). The annual stack tests shall start after the initial stack test for each unit and shall occur during the same quarter annually. Stack tests for those boilers and heaters that will not be modified, and are not required to complete the initial stack test in the first year from the issuance of the flexible permit (because they were tested within the last five years), will be completed no later than July 13, 2006. The SO₂ emissions from the unit being tested shall also be estimated on an annual basis using the H₂S concentrations obtained from the H₂S fuel gas monitoring system and the fuel flow rate to the unit being tested.

In addition to the above testing requirements, the fuel flow rate (along with other parameters determined at the pretest meeting to be essential for monitoring a units performance) shall be continuously monitored and recorded. Beginning no later than September 13, 2005, the heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling.

Should the stack test from a particular unit indicate an exceedance of the short-term (lb/hr) and/or annual (TPY) emission rate used in the emission cap calculation, the applicant shall provide adequate information to demonstrate continuing compliance with the emissions cap.

Records shall be maintained indicating any exceedance of units represented firing rates. Should the firing rate of any unit exceed its permit representations (represented contribution to the emission cap), the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap. (8/10)

44. For boilers, heaters, etc., with maximum firing rates less than 40 MMBtu/hr, the fuel flow rate shall be continuously monitored and recorded. The heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling. In addition, H₂S concentrations shall be obtained from the H₂S fuel gas monitoring system. Records, including the flow, quarterly Btu, and H₂S, shall be maintained and used to indicate any exceedance of a unit's represented firing rate(s). Should the firing rate of any unit exceed its permit representations, the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 20

45. For SRUs that handle ammonia acid gas from sour water stripper overheads, the holder of this permit may do either of the following:
- A. The acid gas exiting the waste heat boilers shall be sampled for ammonia on a quarterly basis. When the ammonia concentration exceeds 300 ppmv, the holder of this permit shall implement procedures or actions that are needed to ensure that the sampled ammonia concentration drops below 300 ppmv by the time the next quarterly sample is taken. Drager tubes or another sampling method, as approved by the TCEQ, shall be used to sample for ammonia.
 - B. The holder of this permit shall inspect the sulfur condenser outlets (each sulfur condenser) on each SRU for the presence of ammonia salt formation or buildup. The inspections shall be conducted on an annual basis, and the TCEQ Houston Regional Office shall be informed prior to conducting the inspection (and given the opportunity to observe the sulfur condenser inspection). If ammonia salts are present, the holder of this permit shall implement a monthly ammonia sampling frequency as described in Paragraph A of this condition and the TCEQ Houston Regional Office shall be notified within 30 days.

The sampling results shall be presented in terms of ppmv. The ammonia sampling of the acid gas exiting the SRUs, or inspections of the sulfur condensers for each SRU shall commence no later than May 13, 2006. Records of sampling/inspection time, date, and sampling/inspection results shall be maintained. (2/13)

46. The holder of this permit shall perform sampling and other testing as necessary to establish and demonstrate ongoing compliance with the VOC emission limits, pounds per hour (lb/hr) and tons per year (TPY), from the cooling towers. The cooling tower return water shall be monitored monthly with an approved air stripping system, or approved equivalent, when the cooling towers are in service. The minimum detection level of the testing system shall be equivalent to no more than approximately 5 ppmv. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. The results of the monitoring and maintenance efforts shall be recorded.

If a leak equivalent to more than the ppmv value listed above is detected, the owner or operator shall repair the leak as soon as practical but not later than 45 calendar days after the holder of this permit receives results of monitoring indicating a leak. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as possible. For the purposes of this permit condition, delay of repair means exceeding the 45-day time frame described above. Prior to exceeding the time frame described above, all documentation of a decision to delay repair shall be submitted to the TCEQ Houston Regional Office for review and approval.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 21

Delay of repair on heat exchanger systems for which leaks have been detected is allowed if the equipment is isolated from the process. In addition, delay of repair is also allowed in the following situations:

- A. If repair is technically infeasible without a shutdown, and a shutdown is expected within the next two months.
- B. Delay of repair is also allowed for up to 120 calendar days if necessary parts or personnel were not available.
- C. Delay of repair is also allowed if repair is technically infeasible without a shutdown and the shutdown would cause greater emissions than the potential emissions from delaying repair. The owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair.

47. Carbon Canister Sampling. The carbon adsorption system controlling emissions from APIs 1 and 3 shall consist of a dual carbon system. **(10/10)**

- A. The carbon canisters shall be sampled and recorded, three times per week, to determine breakthrough of VOC for the dual carbon systems controlling the APIs and Lift Stations. The carbon canisters shall be sampled and recorded one time per week, to determine breakthrough of VOC for the dual carbon systems controlling Oil Water Separators (OWS) or Dry Weather Sumps (DWS) on the units in or outside battery limit (OSBL) areas. The sampling point shall be at the outlet of the first carbon bed but before the inlet to the second carbon bed.
- B. Breakthrough shall be defined as a VOC concentration of 100 ppmv as measured as methane. When VOC breakthrough is detected, the waste gas flow shall be directed to a portable dual carbon system while the saturated carbon is replaced with fresh carbon. Sufficient fresh activated carbon shall be maintained at the site such that spent carbon can be replaced as specified.
- C. The method of VOC sampling and analysis shall be by photo-ionization detector (PID), Ultraray, or a TCEQ equivalent as approved by the Regional Office. On each day that sampling is to occur, the analyzer shall be calibrated prior to sampling with a certified gas mixture at 100 ppmv \pm 10 percent.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 22

- D. Records of the carbon canister monitoring maintained at the plant site shall include (but are not limited to) the following:
- (1) Monitoring results;
 - (2) Corrective action taken (including the time and date of that action) when breakthrough occurs; and
 - (3) Process operations at the time that breakthrough occurs. **(3/08)**

Compliance Assurance Monitoring

48. The following requirements apply to capture systems for the plant flare system and the FCCU 3 scrubber.

- A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.
- B. The control device shall not have a bypass.

or

If there is a bypass for the control device, comply with either of the following requirements:

- (1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or
- (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals that prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, conservation vents on tanks, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 23

- C. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above. **(12/11)**

Leak Detection and Repair (LDAR) Programs

49. [reserved]

50. [reserved]

51. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - 28VHP (8/10)

Except as may be provided for in the special conditions of this permit, the following requirements apply to all fugitive components at the units authorized under this permit:

- A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68°F or (2) to piping and valves two inches nominal size and smaller or (3) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable ANSI, API, ASME, or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 24

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the line or valve must have a cap, blind flange, plug, or second valve installed, or the open-ended valve or line shall be monitored for leaks above background within 72 hours. The open-ended valve or line shall be monitored weekly thereafter with an approved gas analyzer and the results recorded. Leakage indicated by readings above background must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a) - (b).

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 25

- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.
 - I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
 - J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
 - K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Paragraphs F through G of this condition.
 - L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations.
52. All process drains shall be instrument-monitored with an approved gas analyzer on an annual basis using a 500 ppmv leak definition. The gas analyzer shall conform to the requirements listed in 40 CFR § 60.485(a)-(b).
53. Ambient H₂S monitors shall be placed through the sulfur recovery, amine regeneration, and sour water stripper areas. These monitors shall be arranged in such a way that coverage is provided for all wind directions. The monitors shall be set to alarm at 10 ppmv and shall alarm in the control room. A plot identifying the number and location of each monitor shall be maintained in the control room handling each one of the areas described above.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 26

54. Piping, Valves, Pumps, and Compressors in Ammonia (NH₃), H₂S, and SO₂ Service **(10/10)**

- A. Audio, olfactory, and visual checks for NH₃, H₂S, and SO₂ leaks within the following operating areas shall be made once per shift (once every 12 hours):

| Pollutant(s) | Operating Area(s) |
|--------------------------------------|--|
| NH ₃ | Aqueous ammonia storage and piping |
| H ₂ S and SO ₂ | SRU, sour water stripper area, amine contactor and regenerator, and hydrotreater areas handling H ₂ S and SO ₂ |

- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall:

- (1) Stop the leak by taking the equipment out of service, or
- (2) Bypass the equipment so that it is no longer in service, or
- (3) Isolate the leak, or
- (4) Commence repair or replacement of the leaking component.

If the leak cannot be repaired within six hours, the holder of this permit shall use clamping procedures to prevent the leak until replacement or repair can be performed.

Records shall be maintained at the plant site of all repairs and replacements made due to leaks. A reminder that visual checks for NH₃, H₂S, and SO₂ leaks need to be made once per shift shall be included in the appropriate unit operator manual no later than September 13, 2005. **(8/10)**

Emission Cap Compliance Recordkeeping

55. The holder of this permit shall use continuous emissions data, sampling data, firing rates, throughput, fill rates, etc, to perform emission calculations at least once every month in order to verify compliance with the annual (TPY) emission caps. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and TPY emissions caps and individual emission limitations and provide such demonstration of compliance to the TCEQ or local air pollution control program representatives upon request.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 27

If any information obtained from parameter monitoring (throughput, pump rates, etc.), sampling data or continuous emission monitor (CEM) data indicates that a facility is exceeding its proposed contribution to the emissions cap (lb/hr and/or TPY), the holder of this permit shall provide adequate information to demonstrate that the lb/hr and/or TPY emissions caps were not exceeded, and that the BACT representations for the facilities contributing to the emissions CAP is being met.

For the time period between July 13, 2005, and July 31, 2005, the facilities contained in this flexible permit will show compliance with their individual emission limitations in accordance with their respective authorization, e.g., permit, exemption, permit-by-rule.

For the time period August 1, 2005 through July 31, 2006, compliance with emissions caps and individual emission limitations will be on an apportioned calendar basis (apportioned meaning that each month is allotted 1/12th of the annual emissions cap or individual emission limitation).

After July 31, 2006, compliance with the annual emission caps and individual emission limitations of this flexible permit shall be based on a rolling 12-month basis. **(8/10)**

56. Emissions from sources covered under this permit shall be determined as follows. If a source type is not listed below, the permit holder shall use the methodology which was used in the permit application.

Atmospheric Storage Tanks: Emissions for tanks shall be calculated using: (a) AP-42 A Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids and (b) the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks." Short-term emission rate shall be based on the maximum expected pumping rate (fixed-roof) and the higher of the pumping rate or withdrawal rate (IFR and EFR).

Marine Loading: AP-42 Chapter 5.2-4 (Fifth Edition) L_L Equation - The collection efficiency is 100 percent collection (vacuum loading system) for all compounds equal to or greater than 0.5 psia.

Piping Fugitives: Component counts, emission factors, and reduction credits specified in the permit application for the various inspection and maintenance programs.

Boilers and Heaters: CEM information if such a device is installed. The most recent stack test results if a CEM is not installed. If no stack sampling is required, use the proper emission factor for the specific unit and the measured Btu value and flow rate of the fuel.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 28

SRU and FCCU: CEM information. Use the most recent stack test for those compounds which are not subject to CEM requirements. **(10/10)**

Maintenance, Startup, and Shutdown (MSS) Activities

57. This permit authorizes the emissions from the facilities identified in Attachment D for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

- A. The process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
- B. The type of planned MSS activity and the reason for the planned activity;
- C. The common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;
- D. The date and time of the MSS activity and its duration;
- E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 29

All MSS emissions authorized by this permit shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. (8/10)

58. Process units and facilities, with the exception of those identified in Special Condition Nos. 61, 62, 64, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.
- A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.
 - B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
 - C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.
 - D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 30

recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of Paragraph D(2) of this condition. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) (or equivalent) per the site safety procedures.
 - (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's or P&ID's may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 59. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample locations and collection systems must be located downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.
- E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:
- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.
 - (2) There is not an available connection to a plant control system (flare).
 - (3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 31

All instances of venting directly to atmosphere per Paragraph E of Special Condition No. 58 must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B. **(8/10)**

59. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded.
- (2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in Subparagraph (3) of this condition, the concentration measured is at least 20 percent of the maximum range of the tube.
- (2) The tube is used in accordance with the manufacturer's guidelines.
- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) less than release concentration.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 32

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
- (3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane. (8/10)

60. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- A. a cap, blind flange, plug, or second valve must be installed on the line or valve; or
- B. the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once at the end of the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 33

recorded. For turnarounds and all other situations, leaks are indicated by readings 20 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. (8/10)

61. This permit authorizes emissions from the storage tanks identified in Attachment D during planned floating roof landings. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Emissions from change of service tank landings shall not exceed 10 tons of VOC in any rolling 12-month period. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the ECIELT. The following requirements apply to tank roof landings.
 - A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.
 - B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:
 - (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 34

- (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.
 - (3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition No. 59.
 - (4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.
 - (5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.
- C. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in Paragraph D of this condition is satisfied.
- (1) Minimize air circulation in the tank vapor space.
 - a. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
 - b. Access points shall be closed when not in use.
 - (2) Minimize time and VOC partial pressure.
 - a. The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psi as documented by the method specified in Paragraph D(1) of this condition;

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 35

- b. Blowers may be used to move air through the tank without emission control at a rate not to exceed 12,000 cubic feet per minute for no more than 12 hours. All standing liquid shall be removed from the tank during this period; and
 - c. Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.
 - D. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.
 - (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
 - (2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:
 - a. Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A Appendix 1.
 - b. Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 8015 from SW-846).
 - c. Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1,000 ppmv through the procedure in Special Condition No. 59.
 - (3) No standing liquid verified through visual inspection.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 36

The permit holder shall maintain records to document the method used to release the tank.

- E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:
- (1) Only one benzene tank with a landed floating roof can be filled at any time at a rate not to exceed 1,000 bbl/hr.
 - (2) The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.
- F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:
- (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
 - (2) the reason for the tank roof landing;
 - (3) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:
 - a. the roof was initially landed,
 - b. all liquid was pumped from the tank to the extent practical,
 - c. start and completion of controlled degassing, and total volumetric flow,
 - d. all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,
 - e. if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 37

- f. refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and
 - g. tank roof off supporting legs, floating on liquid.
 - (4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application, PI-1, submitted January 5, 2007.
(8/10)
- 62. Storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. This shall be verified and documented through one of the criteria identified in Paragraph C of Special Condition No. 61. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC partial pressure greater than 0.02 psi vapor as necessary to set up for degassing and cleaning. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of Subparagraphs B(1) through B(5) of Special Condition No. 61 and records maintained per Subparagraphs E(3)c through E(3)e, and E(4) of Special Condition No. 61. Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia. (8/10)
- 63. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:
 - A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.
 - B. Equip fill line intake with a "duckbill" or equivalent attachment if the hose end cannot be submerged in the liquid being collected.
 - C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.
 - (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 38

each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.

- (2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.
 - (3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by Special Condition No. 67, measured using an instrument meeting the requirements of Special Condition No. 59.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
- D. The permit holder shall determine the vacuum truck emissions each month using the vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.
- E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Paragraphs A through D of this condition do not apply. **(8/10)**
64. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.
- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
 - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 39

- C. These requirements do not apply to vessels storing less than 100 gallons of liquid that are closed such that the vessel does not vent to atmosphere.
 - D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
 - E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application. (8/10)
65. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. (8/10)
66. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment D during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.
- A. Combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in special conditions in other NSR permits during planned startup and shutdown if the following criteria are satisfied.
 - (1) The maximum allowable emission rates in the permit authorizing the facility are not exceeded.
 - (2) The startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 40

- (3) Control devices are started and operating properly when venting a waste gas stream.

- B. The limits identified below apply to the operations of the specified facilities during startup and shutdown.

During periods of startup of FCCU-3, the CO emissions are not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmv at 3 percent O₂ on a rolling 24-hour average basis. A CO continuous emission monitor must be properly operated and maintained. The emissions during startup can average 1,500 ppmv at 3 percent O₂ on a rolling 24-hour average basis for up to two days.

- C. A record shall be maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each have been satisfied. **(8/10)**

- 67. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

- A. Carbon Adsorption System (CAS). **(12/11)**

- (1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.
- (2) The CAS shall be sampled down stream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:
 - a. CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.
 - b. Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 41

maintain records including the calculations performed to determine the minimum saturation time.

- c. The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.
- (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59.
 - (4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon shall be maintained at the site to replace spent carbon such that replacements can be done in the above specified time frame.
 - (5) Records of CAS monitoring shall include the following:
 - a. Sample time and date.
 - b. Monitoring results (ppmv).
 - c. Canister replacement log.
 - (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 42

- (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer

- (1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1,250°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

The thermal oxidizer combustion chamber exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.

- (2) As an alternative to Paragraph B(1) of this condition, the thermal oxidizer may be tested to confirm a minimum of 99 weight percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. A stack test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable EPA Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer and a summary of the testing results shall be included with the emission calculations.
- (3) As an alternative to Paragraphs B(1) and B(2) of this condition, the thermal oxidizer may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained in accordance with Special Conditions No. 59, except Paragraph C of Special Condition No. 59. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations shall be measured and inlet and outlet VOC mass rates shall be calculated on an hourly basis to confirm minimum 99 weight percents destruction efficiency or an exhaust concentration no greater than 20 ppmv.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 43

C. Internal Combustion Engine.

- (1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.
- (2) The engine must have been stack tested with butane or propane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition No. 59 are also acceptable for this documentation.

The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting the requirements of Special Condition No. 59.A. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

- (3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 44

D. Flares

- (1) The heating value and velocity requirements in 40 CFR § 60.18 shall be satisfied during operations authorized by this permit.
- (2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- (3) The permit holder shall either demonstrate 40 CFR § 60.18 BTU requirements are met during the MSS flaring activity using engineering calculations or install a continuous flow monitor and either a composition analyzer that provides a record of the vent stream flow and total VOC content to the flare or a calorimeter that provides a record of the Btu content of the vent stream flow to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition or BTU content shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ± 5.0 percent, temperature monitor shall be ± 2.0 percent at absolute temperature, and pressure monitor shall be ± 5.0 mm Hg;

If a total VOC analyzer is installed, calibration of the composition analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 45

If a calorimeter is installed, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes. If a total VOC analyzer is installed, hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated January 5, 2007. **(8/10)**

- E. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.
- (1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.
 - (2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59A.
 - (3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.
- F. A closed loop refrigerated vapor recovery system
- (1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 46

- (2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition No. 59.
 - (3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.
68. With the exception of the ECIELT emission limits, Special Condition Nos. 57 through 67 become effective 180 days after the permit amendment received by the TCEQ on January 5, 2007, has been approved. During this period, monitoring and recordkeeping shall satisfy the requirements of Paragraphs A through D of Special Condition No. 57. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. The permit holder may maintain abbreviated records of emissions from Attachment A and B activities as allowed in Special Condition No. 57 rather than documenting all the information required by Paragraphs A through D of Special Condition No. 57.

Other Requirements

69. The FCCU1 project authorized by the alteration application, dated October 14, 2010, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 33.98 | 68.08 | 139.69 | 312.56 | 17.64 |
| 80 | B501 Furnace | 46052 | 4.33 | 3.24 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.80 | 7.54 | 2.23 | 1.02 | 1.61 |
| 384 | SRU C&D Incin | 47256 | 52.68 | 30.89 | 0.00 | 115.19 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 47

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 43.08 | 72.46 | 154.55 | 251.82 | 22.36 |
| 80 | B501 Furnace | 46052 | 4.34 | 3.25 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.81 | 7.66 | 2.26 | 1.03 | 1.64 |
| 384 | SRU C&D Incin | 47256 | 52.69 | 30.89 | 0.00 | 115.20 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

70. The FCCU3 project authorized by the amendment application, dated April 26, 2011, was determined not to be subject to major new source review for CO, NO_x, PM/PM₁₀/PM_{2.5}, SO₂, or VOC by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 851.73 | 173.86 | 289.77 | 199.94 | 38.61 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.44 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.86 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.26 | 26.19 | | 366.62 | 2.14 |

SPECIAL CONDITIONS

Flexible Permit Numbers 47256 and PSDTX402M3

Page 48

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------------|--------|--------|-----------------|---|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 499.23 | 109.33 | 299.67 | 190.29 | 33.98 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.45 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.87 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.29 | 26.19 | | 366.65 | 2.14 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

71. The Tank 117 throughput increase project associated with the permit amendment application, PI-1 dated October 22, 2012, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities modified or potentially affected by the project. Actual emissions from tank 117 shall be monitored, recorded, and reports made in accordance with 30 TAC §116.127 for the time period specified in 30 TAC §116.127(b) (1). The projected actual rate for tank 117 is 1.55 tpy VOC. (2/13)

Dated February 15, 2013

ATTACHMENT A

Flexible Permit Numbers 47256 and PSDTX402M3

Inherently Low Emitting Activities

| Activity | Emissions | | | | |
|--|-----------|-----------------|----|-----------------|------------------|
| | VOC | NO _x | CO | SO ₂ | H ₂ S |
| Analyzer calibration | X | X | X | X | X |
| Analyzer filter changeouts | X | | | | X |
| Carbon canister replacement | X | | | | |
| Equipment Lubrication (WD-40, etc.) | X | | | | |
| Injection quill repairs / replacement | X | | | | |
| Instrumentation repairs / replacement | X | | | | |
| Meter proving | X | | | | |
| Process Sampling | X | | | | X |
| Sight glass or level instrument maintenance / repair / replacement | X | | | | X |
| Solvent cleaning of fixed, immovable objects | X | | | | |

Dated December 13, 2011

ATTACHMENT B

Flexible Permit Numbers 47256 and PSDTX402M3

Routine Maintenance Activities

Planned MSS activities performed with work orders where the isolated system volume is less than 30 cubic feet. These include activities such as:

- Pump repair/replacement
- Fugitive component (valve, pipe, flange) repair/replacement
- Compressor repair/replacement
- Heat exchanger repair/replacement
- Vessel repair/replacement

Dated December 13, 2011

ATTACHMENT C

Flexible Permit Numbers 47256 and PSDTX402M3

MSS Activity Summary

| Facilities | Description | Emissions Activity | EPN or Group |
|-------------------------------------|--|---------------------------------------|-------------------------------------|
| all process units | process unit shutdown/depressurize/drain | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units | process unit purge/degas/drain | vent to atmosphere | F-1000 |
| all process units | process unit startup | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | recovery from facility / component repair / replacement | vent to flare | Flares and Incinerators |
| all process units and storage tanks | recovery from facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | preparation for unit turnaround or facility/component repair/replacement | remove liquid | F-1000 |
| all floating roof storage tanks | tank roof landing | operation with landed roof | F-1000 |
| all floating roof storage tanks | degas of tank with landed roof | vent to control device | 311, 321, 331, 400, TEMP1 and TEMP2 |
| all storage tanks | tank cleaning | cleaning activity and solvents | F-1000 |
| see Attachment A | miscellaneous low emitting activities | see Attachment A | F-1000 |

Dated December 13, 2011

ATTACHMENT D

Flexible Permit Number 47256 and PSDTX402M3

Facility List

This permit authorizes emissions from the following temporary facilities used to support planned maintenance, startup, and shutdown (MSS) activities at permanent site facilities: frac tanks, containers, vacuum trucks, portable control devices identified in Special Condition No. 67 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

This permit authorizes MSS emissions from the permanent site facilities identified below. The headings for each group of facilities (Process Units, Tanks, etc) are used in the MSS Activity Summary to identify all facilities in the respective group.

| Process Units | | |
|----------------------------------|--------------|------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Alkylate 3 Debutanizer Unit | ALKY3DB | 20850 |
| Alkylation Unit No. 2 | ALKY2 | 47256/PSDTX402M3 |
| Alkylation Unit no. 3 | ALKY3 | 9606 |
| Aromatics Recovery Unit | ARU | 2231 |
| Aromatics Unit 2 | AU2 | 2612 |
| Cat Feed Hydrotreater Unit | CFHU | 47256/PSDTX402M3 |
| Coker Residuum Preheat System | N/A | 6592 |
| Coking Complex | Coker | 2315 |
| Distillate Desulphurization Unit | DDU | 47256/PSDTX402M3 |
| Distillate Ultrafiner Facility | N/A | 47256/PSDTX402M3 |
| Docks | Docks | 47256/PSDTX402M3 |
| Environmental Facility | ENVF | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 1 | FCCU1 | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 3 | FCCU3 | 47256/PSDTX402M3 |
| Hydrocarbon Tank 537 | N/A | 1940 |
| Hydrogen Recovery Unit | HRU | 47256/PSDTX402M3 |
| Naphtha Desulphurization Unit | NDU | 46052 |
| Pipestills 3A and 3B | PS3A/B | 19599 |
| Power Station No. 2 | PWRS2 | 47256/PSDTX402M3 |
| Raffinate Splitter Tower | N/A | 47256/PSDTX402M3 |
| Resid Deasphalting Unit | RDU | 47256/PSDTX402M3 |
| Resid Hydrotreating Unit | RHU | 47256/PSDTX402M3 |
| Sulfur Recovery Unit | SRU | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| Process Units | | |
|---------------------------|---------------|---------------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Tank Farm | OMCC | 2231 and 47256/PSDTX402M3 |
| Ultracracker Unit | ULC ancillary | 2609 |
| Ultraformer Unit No. 3 | UU3 | 47256/PSDTX402M3 |
| Ultraformer Unit No. 4 | UU4 | 6488 |
| Wastewater Treatment Unit | WWTP | 22107 |

| Flares and Incinerators | | |
|--------------------------------|--------|------------------|
| Flare or Incinerator Number | EPN | NSR Permit No. |
| Refinery Flare No. 2 | 311 | 47256/PSDTX402M3 |
| Refinery Flare No. 3 | 321 | 47256/PSDTX402M3 |
| Refinery Flare No. 4 | 331 | 47256/PSDTX402M3 |
| ULC Flare | 351A | 47256/PSDTX402M3 |
| SRU A/B Flare | 381 | 47256/PSDTX402M3 |
| SRU C/D Flare | 383 | 47256/PSDTX402M3 |
| SRU Incinerator C and D | 384 | 47256/PSDTX402M3 |
| DDU Flare | 396A | 47256/PSDTX402M3 |
| Flare 8 | 400 | 47256/PSDTX402M3 |
| CFHU Flare 1 | 501 | 47256/PSDTX402M3 |
| SRU Sour Water System Flare | FLR-SW | 47256/PSDTX402M3 |
| Ground Flare #5 | TCH-5 | 15497 |
| Flare 6 | 530 | 9606 |
| AU2 Flare | 611 | 2612 |
| Temporary Control Device No. 1 | TEMP1 | 47256/PSDTX402M3 |
| Temporary Control Device No. 2 | TEMP2 | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|--------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 4 | 280-4 | 47256/PSDTX402M3 |
| Tank 5 | 280-5 | 47256/PSDTX402M3 |
| Tank 7 | 280-7 | 47256/PSDTX402M3 |
| Tank 8 | 280-8 | 2231 |
| Tank 9 | 280-9 | 2231 |
| Tank 10 | 280-10 | 2231 |
| Tank 11 | 280-11 | 47256/PSDTX402M3 |
| Tank 12 | 280-12 | 47256/PSDTX402M3 |
| Tank 13 | 280-13 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| Storage Tanks | | |
|---------------|---------|---------------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 13A | 280-13A | 47256/PSDTX402M3 |
| Tank 14 | 280-14 | 47256/PSDTX402M3 |
| Tank 14A | 280-14A | 47256/PSDTX402M3 |
| Tank 16 | 280-16 | 47256/PSDTX402M3 |
| Tank 17 | 280-17 | 47256/PSDTX402M3 |
| Tank 18 | 280-18 | 47256/PSDTX402M3 |
| Tank 19 | 280-19 | 2231 |
| Tank 20 | 280-20 | 2231 |
| Tank 22 | 280-22 | 47256/PSDTX402M3 |
| Tank 23 | 280-23 | 47256/PSDTX402M3 |
| Tank 24 | 280-24 | 47256/PSDTX402M3 |
| Tank 25 | 280-25 | 47256/PSDTX402M3 |
| Tank 26 | 280-26 | 47256/PSDTX402M3 |
| Tank 27 | 280-27 | 47256/PSDTX402M3 |
| Tank 28 | 280-28 | 2231 |
| Tank 29 | 280-29 | 2231 |
| Tank 30 | 280-30 | 2231 |
| Tank 31 | 280-31 | 47256/PSDTX402M3 |
| Tank 32 | 280-32 | 47256/PSDTX402M3 |
| Tank 34 | 280-34 | 47256/PSDTX402M3 |
| Tank 36 | 280-36 | 2231 |
| Tank 37 | 280-37 | 2231 and 47256/PSDTX402M3 |
| Tank 38 | 280-38 | 2231 and 47256/PSDTX402M3 |
| Tank 39 | 280-39 | 2231 |
| Tank 41 | 280-41 | 47256/PSDTX402M3 |
| Tank 42 | 280-42 | 47256/PSDTX402M3 |
| Tank 43 | 280-43 | 47256/PSDTX402M3 |
| Tank 43A | 280-43A | 47256/PSDTX402M3 |
| Tank 44 | 280-44 | 47256/PSDTX402M3 |
| Tank 45 | 280-45 | 47256/PSDTX402M3 |
| Tank 46 | 280-46 | 47256/PSDTX402M3 |
| Tank 47 | 280-47 | 47256/PSDTX402M3 |
| Tank 48 | 280-48 | 47256/PSDTX402M3 |
| Tank 48A | 280-48A | 47256/PSDTX402M3 |
| Tank 49 | 280-49 | 47256/PSDTX402M3 |
| Tank 50 | 280-50 | 47256/PSDTX402M3 |
| Tank 51 | 280-51 | 47256/PSDTX402M3 |
| Tank 52 | 280-52 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 53 | 280-53 | 47256/PSDTX402M3 |
| Tank 54 | 280-54 | 47256/PSDTX402M3 |
| Tank 55 | 280-55 | 47256/PSDTX402M3 |
| Tank 56 | 280-56 | 47256/PSDTX402M3 |
| Tank 57 | 280-57 | 47256/PSDTX402M3 |
| Tank 59 | 280-59 | 47256/PSDTX402M3 |
| Tank 60 | 280-60 | 47256/PSDTX402M3 |
| Tank 60A | 280-60A | 47256/PSDTX402M3 |
| Tank 61 | 280-61 | 47256/PSDTX402M3 |
| Tank 63 | 280-63 | 47256/PSDTX402M3 |
| Tank 64 | 280-64 | 47256/PSDTX402M3 |
| Tank 65 | 280-65 | 47256/PSDTX402M3 |
| Tank 66 | 280-66 | 47256/PSDTX402M3 |
| Tank 67 | 280-67 | 47256/PSDTX402M3 |
| Tank 71 | 280-71 | 47256/PSDTX402M3 |
| Tank 72 | 280-72 | 47256/PSDTX402M3 |
| Tank 73 | 280-73 | 47256/PSDTX402M3 |
| Tank 73A | 280-73A | 47256/PSDTX402M3 |
| Tank 80 | 280-80 | 47256/PSDTX402M3 |
| Tank 90 | 280-90 | 47256/PSDTX402M3 |
| Tank 91 | 280-91 | 47256/PSDTX402M3 |
| Tank 92 | 280-92 | 47256/PSDTX402M3 |
| Tank 93 | 280-93 | 47256/PSDTX402M3 |
| Tank 94 | 280-94 | 47256/PSDTX402M3 |
| Tank 95 | 280-95 | 47256/PSDTX402M3 |
| Tank 97 | 280-97 | 47256/PSDTX402M3 |
| Tank 98 | 280-98 | 47256/PSDTX402M3 |
| Tank 100 | 280-100 | 47256/PSDTX402M3 |
| Tank 101 | 280-101 | 2231 |
| Tank 102 | 280-102 | 2231 |
| Tank 103 | 280-103 | 47256/PSDTX402M3 |
| Tank 103A | 280-103A | 47256/PSDTX402M3 |
| Tank 104 | 280-104 | 47256/PSDTX402M3 |
| Tank 105 | 280-105 | 47256/PSDTX402M3 |
| Tank 106 | 280-106 | 47256/PSDTX402M3 |
| Tank 107 | 280-107 | 2231 |
| Tank 108A | 280-108A | 2231 |
| Tank 110 | 280-110 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 111 | 280-111 | 2231 |
| Tank 112 | 280-112 | 2231 |
| Tank 113 | 280-113 | 2231 |
| Tank 114 | 280-114 | 2231 |
| Tank 115 | 280-115 | 2231 |
| Tank 116 | 280-116 | 2231 |
| Tank 117 | 280-117 | 47256/PSDTX402M3 |
| Tank 117A | 280-117A | 47256/PSDTX402M3 |
| Tank 118 | 280-118 | 47256/PSDTX402M3 |
| Tank 127 | 280-127 | 47256/PSDTX402M3 |
| Tank 128 | 280-128 | 47256/PSDTX402M3 |
| Tank 129 | 280-129 | 47256/PSDTX402M3 |
| Tank 130 | 280-130 | 47256/PSDTX402M3 |
| Tank 131 | 280-131 | 47256/PSDTX402M3 |
| Tank 140 | 280-140 | 47256/PSDTX402M3 |
| Tank 181 | 280-181 | 47256/PSDTX402M3 |
| Tank 183 | 280-183 | 2231 |
| Tank 184 | 280-184 | 2231 |
| Tank 185 | 280-185 | 2231 |
| Tank 186 | 280-186 | 2231 |
| Tank 187 | 280-187 | 2231 |
| Tank 188 | 280-188 | 2231 |
| Tank 269 | 280-269 | 47256/PSDTX402M3 |
| Tank 269A | 280-269A | 47256/PSDTX402M3 |
| Tank 270 | 280-270 | 47256/PSDTX402M3 |
| Tank 295 | 280-295 | 47256/PSDTX402M3 |
| Tank 296 | 280-296 | 47256/PSDTX402M3 |
| Tank 297 | 280-297 | 47256/PSDTX402M3 |
| Tank 298 | 280-298 | 47256/PSDTX402M3 |
| Tank 501 | 280-501 | 47256/PSDTX402M3 |
| Tank 502 | 280-502 | 47256/PSDTX402M3 |
| Tank 503 | 280-503 | 47256/PSDTX402M3 |
| Tank 504 | 280-504 | 47256/PSDTX402M3 |
| Tank 520 | 280-520 | 2231 |
| Tank 528 | 280-528 | 47256/PSDTX402M3 |
| Tank 529 | 280-529 | 47256/PSDTX402M3 |
| Tank 530 | 280-530 | 47256/PSDTX402M3 |
| Tank 531 | 280-531 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| Storage Tanks | | |
|---------------|-----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 532 | 280-532 | 2231 |
| Tank 533 | 280-533 | 2231 |
| Tank 534 | 280-534 | 2231 |
| Tank 535 | 280-535 | 2231 |
| Tank 536 | 280-536 | 47256/PSDTX402M3 |
| Tank 537 | 280-537 | 1940 |
| Tank 538 | 280-538 | 2231 |
| Tank 560 | 280-560 | 47256/PSDTX402M3 |
| Tank 561 | 280-561 | 47256/PSDTX402M3 |
| Tank 608-F | 108-608 | 2231 |
| Tank 609-F | 108-609 | 2231 |
| Tank 652 | 280-652 | 47256/PSDTX402M3 |
| Tank 653 | 280-653 | 47256/PSDTX402M3 |
| Tank 1004 | 280-1004 | 47256/PSDTX402M3 |
| Tank 1004A | 280-1004A | 47256/PSDTX402M3 |
| Tank 1011 | 76 | 6592 |
| Tank 1012 | 480-1012 | 47256/PSDTX402M3 |
| Tank 1013 | 480-1013 | 47256/PSDTX402M3 |
| Tank 1018 | 280-1018 | 47256/PSDTX402M3 |
| Tank 1020 | 280-1020 | 47256/PSDTX402M3 |
| Tank 1021 | 280-1021 | 47256/PSDTX402M3 |
| Tank 1023 | 280-1023 | 47256/PSDTX402M3 |
| Tank 1024 | 280-1024 | 47256/PSDTX402M3 |
| Tank 1025 | 280-1025 | 47256/PSDTX402M3 |
| Tank 1039 | 280-1039 | 47256/PSDTX402M3 |
| Tank 1041 | 280-1041 | 2231 |
| Tank 1042 | 280-1042 | 2231 |
| Tank 1044 | 280-1044 | 2231 |
| Tank 1045 | 280-1045 | 47256/PSDTX402M3 |
| Tank 1046 | 280-1046 | 47256/PSDTX402M3 |
| Tank 1047 | 280-1047 | 47256/PSDTX402M3 |
| Tank 1048 | 280-1048 | 47256/PSDTX402M3 |
| Tank 1051 | 280-1051 | 47256/PSDTX402M3 |
| Tank 1052 | 280-1052 | 4714 |
| Tank 1053 | 280-1053 | 4714 |
| Tank 1055 | 280-1055 | 47256/PSDTX402M3 |
| Tank 3010 | 280-3010 | 47256/PSDTX402M3 |
| Tank 4000 | 280-4000 | 47256/PSDTX402M3 |

ATTACHMENT D

Flexible Permit Numbers 47256 and PSDTX402M3

Page 7

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 4011 | 280-4011 | 47256/PSDTX402M3 |
| Tank 4016 | 280-4016 | 47256/PSDTX402M3 |

Dated December 13, 2011

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Emission Points included in Normal Operation Emission Caps

This table indicates the emission caps which normal operations emissions from an emission point are included in.

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 33 | FCCU 3 404B Heater | X | X | X | X | | X | | |
| 34 | FCCU No. 3 (1) | X | X | X | X | | X | | |
| 61 | FCCU 2 BA201 Heater | X | X | X | X | | X | | |
| 78 | Coker Feed Preheater B302 | X | X | X | X | | X | | |
| 93 | FCCU No. 1 | X | X | X | X | | X | | X |
| 161 | 301-B Reheat Heaters | X | X | X | X | | X | | |
| 162 | 302-B Reheat Heaters | X | X | X | X | | X | | |
| 164 | UU3 304-B Regeneration Flue Gas Heater | X | X | X | X | | X | | |
| 165 | UU3 305-B Hot Oil Heater | X | X | X | X | | X | | |
| 167 | UU3 306-B Preheat Heater | X | X | X | X | | X | | |
| 168 | 307-A/B Desulfurizer Heater | X | X | X | X | | X | | |
| 169 | UU3 308-B Process Heater | X | X | X | X | | X | | |
| 195-F | HUF Fugitives | X | | | | | | X | |
| 201 | ULC 100B Heater | X | X | X | X | | X | | |
| 202 | ULC 101B Heater | X | X | X | X | | X | | |
| 203 | ULC 102B Heater (2) | X | X | X | X | | X | | |
| 204 | ULC 103B Heater | X | X | X | X | | X | | |
| 205 | ULC 104BA Heater (2) | X | X | X | X | | X | | |
| 205 | ULC 104BB Heater (2) | X | X | X | X | | X | | |
| 206 | ULC 105BA Heater | X | X | X | X | | X | | |
| 206 | ULC 105BB Heater | X | X | X | X | | X | | |
| 280-4 | Tank 4 | X | | | | | | X | |
| 280-5 | Tank 5 | X | | | | | | X | |
| 280-11 | Tank 11 | X | | | | | | X | |
| 280-12 | Tank 12 | X | | | | | | X | |
| 280-13 | Tank 13 | X | | | | | | X | |
| 280-13A | Tank 13A | X | | | | | | X | |
| 280-14 | Tank 14 | X | | | | | | X | |
| 280-14A | Tank 14A | X | | | | | | X | |
| 280-16 | Tank 16 | X | | | | | | X | |
| 280-17 | Tank 17 | X | | | | | | X | |
| 280-18 | Tank 18 | X | | | | | | X | |
| 280-22 | Tank 22 | X | | | | | | X | |
| 280-23 | Tank 23 | X | | | | | | X | |
| 280-24 | Tank 24 | X | | | | | | X | |
| 280-25 | Tank 25 | X | | | | | | X | |
| 280-26 | Tank 26 | X | | | | | | X | |
| 280-27 | Tank 27 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 2

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-31 | Tank 31 | X | | | | | | X | |
| 280-32 | Tank 32 | X | | | | | | X | |
| 280-34 | Tank 34 | X | | | | | | X | |
| 280-37 | Tank 37 | X | | | | | | X | |
| 280-38 | Tank 38 | X | | | | | | X | |
| 280-41 | Tank 41 | X | | | | | | X | |
| 280-42 | Tank 42 | X | | | | | | X | |
| 280-43 | Tank 43 | X | | | | | | X | |
| 280-43A | Tank 43A | X | | | | | | X | |
| 280-44 | Tank 44 | X | | | | | | X | |
| 280-45 | Tank 45 | X | | | | | | X | |
| 280-46 | Tank 46 | X | | | | | | X | |
| 280-47 | Tank 47 | X | | | | | | X | |
| 280-48 | Tank 48 | X | | | | | | X | |
| 280-48A | Tank 48A | X | | | | | | X | |
| 280-49 | Tank 49 | X | | | | | | X | |
| 280-50 | Tank 50 | X | | | | | | X | |
| 280-51 | Tank 51 | X | | | | | | X | |
| 280-52 | Tank 52 | X | | | | | | X | |
| 280-53 | Tank 53 | X | | | | | | X | |
| 280-54 | Tank 54 | X | | | | | | X | |
| 280-55 | Tank 55 | X | | | | | | X | |
| 280-56 | Tank 56 | X | | | | | | X | |
| 280-57 | Tank 57 | X | | | | | | X | |
| 280-59 | Tank 59 | X | | | | | | X | |
| 280-60 | Tank 60 | X | | | | | | X | |
| 280-60A | Tank 60A | X | | | | | | X | |
| 280-61 | Tank 61 | X | | | | | | X | |
| 280-63 | Tank 63 | X | | | | | | X | |
| 280-64 | Tank 64 | X | | | | | | X | |
| 280-65 | Tank 65 | X | | | | | | X | |
| 280-66 | Tank 66 | X | | | | | | X | |
| 280-67 | Tank 67 | X | | | | | | X | |
| 280-71 | Tank 71 | X | | | | | | X | |
| 280-72 | Tank 72 | X | | | | | | X | |
| 280-73 | Tank 73 | X | | | | | | X | |
| 280-73A | Tank 73A | X | | | | | | X | |
| 280-80 | Tank 80 | X | | | | | | X | |
| 280-90 | Tank 90 | X | | | | | | X | |
| 280-91 | Tank 91 | X | | | | | | X | |
| 280-92 | Tank 92 | X | | | | | | X | |
| 280-93 | Tank 93 | X | | | | | | X | |
| 280-94 | Tank 94 | X | | | | | | X | |
| 280-95 | Tank 95 | X | | | | | | X | |
| 280-97 | Tank 97 | X | | | | | | X | |
| 280-98 | Tank 98 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 3

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|-----------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-100 | Tank 100 | X | | | | X | | | X |
| 280-103 | Tank 103 | X | | | | | | X | |
| 280-103A | Tank 103A | X | | | | | | X | |
| 280-104 | Tank 104 | X | | | | | | X | |
| 280-105 | Tank 105 | X | | | | | | X | |
| 280-106 | Tank 106 | X | | | | | | X | |
| 280-110 | Tank 110 | X | | | | | | X | |
| 280-117 | Tank 117 | X | | | | | | X | |
| 280-117A | Tank 117A | X | | | | | | X | |
| 280-118 | Tank 118 | X | | | | | | X | |
| 280-127 | Tank 127 | X | | | | | | X | |
| 280-128 | Tank 128 | X | | | | | | X | |
| 280-129 | Tank 129 | X | | | | | | X | |
| 280-130 | Tank 130 | X | | | | | | X | |
| 280-131 | Tank 131 | X | | | | | | X | |
| 280-140 | Tank 140 | X | | | | | | X | |
| 280-181 | Tank 181 | X | | | | | | X | |
| 280-269 | Tank 269 | X | | | | | | X | |
| 280-269A | Tank 269A | X | | | | | | X | |
| 280-270 | Tank 270 | X | | | | | | X | |
| 280-295 | Tank 295 | X | | | | | | X | |
| 280-296 | Tank 296 | X | | | | | | X | |
| 280-297 | Tank 297 | X | | | | | | X | |
| 280-298 | Tank 298 | X | | | | | | X | |
| 280-501 | Tank 501 | X | | | | | | X | |
| 280-502 | Tank 502 | X | | | | | | X | |
| 280-503 | Tank 503 | X | | | | | | X | |
| 280-504 | Tank 504 | X | | | | | | X | |
| 280-528 | Tank 528 | X | | | | | | X | |
| 280-529 | Tank 529 | X | | | | | | X | |
| 280-530 | Tank 530 | X | | | | | | X | |
| 280-531 | Tank 531 | X | | | | | | X | |
| 280-536 | Tank 536 | X | | | | | | X | |
| 280-560 | Tank 560 | X | | | | | | X | |
| 280-561 | Tank 561 | X | | | | | | X | |
| 280-652 | Tank 652 | X | | | | | | X | |
| 280-653 | Tank 653 | X | | | | | | X | |
| 280-1004 | Tank 1004 | X | | | | | | X | |
| 280-1004A | Tank 1004A | X | | | | | | X | |
| 280-1018 | Tank 1018 | X | | | | | | X | |
| 280-1020 | Tank 1020 | X | | | | | | X | |
| 280-1021 | Tank 1021 | X | | | | | | X | |
| 280-1023 | Tank 1023 | X | | | | | | X | X |
| 280-1024 | Tank 1024 | X | | | | | | X | |
| 280-1025 | Tank 1025 | X | | | | | | X | |
| 280-1039 | Tank 1039 | X | | | | | | X | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 4

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-1045 | Tank 1045 | X | | | | | | X | |
| 280-1046 | Tank 1046 | X | | | | | | X | |
| 280-1047 | Tank 1047 | X | | | | | | X | |
| 280-1048 | Tank 1048 | X | | | | | | X | |
| 280-1051 | Tank 1051 | X | | | | | | X | X |
| 280-1055 | Tank 1055 | X | | | | | | X | |
| 280-3010 | Tank 3010 | X | | | | | | X | |
| 280-4000 | Tank 4000 | X | | | | | | X | |
| 280-4011 | Tank 4011 | X | | | | | | X | |
| 280-4016 | Tank 4016 | X | | | | | | X | |
| 294-1 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-2 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-3 | Thermal Oxidizer | X | X | X | X | | | X | |
| 299-32 | Marine Dock | X | | | | | | X | |
| 299-33 | Marine Docks | X | | | | | | X | |
| 299-34 | Marine Docks | X | | | | | | X | |
| 299-37 | Marine Docks | X | | | | | | X | |
| 299-38 | Marine Docks | X | | | | | | X | |
| 311 | Refinery Flare No. 2 | X | X | X | X | X | | X | X |
| 321 | Refinery Flare No. 3 | X | X | X | X | X | | X | X |
| 331 | Refinery Flare No. 4 | X | X | X | X | X | | X | X |
| 351A | ULC Flare | X | X | X | X | X | | X | X |
| 381 | SRU A/B Flare | X | X | X | X | X | | X | X |
| 383 | SRU C/D Flare | X | X | X | X | X | | X | X |
| 384 | SRU Incinerator C and D | X | X | X | X | | X | | |
| 391 | DDU B-101/102 Heaters | X | X | X | X | | X | | |
| 392 | DDU B-201/202 Heaters | X | X | X | X | | X | | |
| 394 | DDU B-301 Heater | X | X | X | X | | X | | |
| 395 | DDU B-302 Reboiler | X | X | X | X | | X | | |
| 396A | DDU Flare | X | X | X | X | X | | X | X |
| 400 | Flare 8 | X | X | X | X | X | | X | X |
| 411 | Alky 2 Cooling Tower | X | | | | | X | | |
| 412 | Coker Cooling Tower | X | | | | | X | | |
| 413 | FCCU 1 Cooling Tower | X | | | | | X | | |
| 415 | FCCU 3 Cooling Tower | X | | | | | X | | |
| 416 | Power 3 Cooling Tower | X | | | | | X | | |
| 418 | ULC Cooling Tower | X | | | | | X | | |
| 419 | NDU Cooling Tower | X | | | | | X | | |
| 421 | UU3 Cooling Tower | X | | | | | X | | |
| 426 | CFHU Cooling Tower | X | | | | | X | | |
| 453 | Oil/Water Separator | X | | | | | | X | |
| 454 | Oil/Water Separator | X | | | | | | X | |
| 471 | CFHU Heaters 101-B and 102-B | X | X | X | X | | X | | |
| 480-1012 | Tank 1012 | X | | | | | | X | |
| 480-1013 | Tank 1013 | X | | | | | | X | |
| 481 | RHU Heaters Train 200 | X | X | X | X | | X | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 5

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 482 | RHU Heaters Train 300 | X | X | X | X | | X | | |
| 483 | RHU Heaters Train 400 | X | X | X | X | | X | | |
| 484 | RHU Fractionation Heaters | X | X | X | X | | X | | |
| 485 | RHU VRS Hot Oil Heater | X | X | X | X | | X | | |
| 501 | CFHU Flare 1 | X | X | X | X | X | | X | X |
| 550 | RDU Heater | X | X | X | X | | X | | |
| 551 | RDU Fugitives | X | | | | | | X | |
| E-02/03 | FCCU1 Waste Water Vent 3 | X | | | | | | X | |
| E-06 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-08 | Oil/Water Separator - FCCU 2 Unit | X | | | | | | X | |
| E-13 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-14 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-16 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-34 | Oil/Water Separator - RDU Unit | X | | | | | | X | |
| E-35 | Oil/Water Separator - CFHU Unit | X | | | | | | X | |
| E-48 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-63 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-68 | Lab Wastewater Collection Sump | X | | | | | | X | |
| E-69 | Environmental Facilities Sump | X | | | | | | X | |
| E-98 | Exchanger Pad Dry Weather Sump #30 | X | | | | | | X | |
| E-99 | Dry Weather Sump #33 | X | | | | | | X | |
| F-8 | Activated Sludge Unit No. 1 | X | | | | | | X | X |
| F-9 | Activated Sludge Unit No. 2 | X | | | | | | X | X |
| F-11 | Final Clarifier Tank No. 2 | X | | | | | | X | X |
| F-22 | Clarifier Effluent Tank | X | | | | | | X | X |
| F-30 | FCCU 3 Fugitives | X | | | | X | | X | X |
| F-30 | Final Effluent Tank | X | | | | | | X | X |
| F-60 | FCCU 2 Fugitives | X | | | | X | | X | X |
| F-90 | FCCU1 Fugitives | X | | | | X | | X | X |
| F-160 | UU3 Fugitives | X | | | | | | X | |
| F-200 | Ultracracker Fugitives | X | | | | X | | X | |
| F-270 | API Separator No. 3A | X | | | | | | X | |
| F-280 | Tank Farm Fugitives | X | | | | | | X | |
| F-294 | Marine Loading Fugitives | X | | | | | | X | |
| F-379 | Dock 54 Fugitives | X | | | | | | X | |
| F-380 | SRU Fugitives | X | | | | X | | | |
| F-390 | DDU 100/200 Fugitives | X | | | | X | | X | |
| F-393 | DDU 300 Fugitives | X | | | | X | | X | X |
| F-400 | Flare 8 Fugitives | X | | | | X | | X | |
| F-470 | CFHU Fugitives | X | | | | X | | X | |
| F-480 | RHU Fugitives | X | | | | | | X | |
| F-486 | HRU Fugitives | X | | | | X | | X | |
| F-490 | Acid Plant H ₂ S Feed | X | | | | | | | |

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Page 6

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|--------|------------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| F-491 | Acid Plant Sludge Feed | X | | | | | | | |
| FLR-SW | SRU Sour Water System Flare | X | X | X | X | X | | X | X |
| W-01 | Oil/Water Separator - UU4 Unit | X | | | | | | X | |
| W-02 | Oil/Water Separator - DDU Unit | X | | | | | | X | |
| W-06 | Oil/Water Separator - ULC/ARU Unit | X | | | | | | X | |
| W-07 | Oil/Water Separator - ULC Unit | X | | | | | | X | |
| W-12 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |
| W-13 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |

X Emissions from this EPN are included in both the initial and final emission cap.

- (1) Facility does not participate in normal operation annual cap for VOC, PM₁₀, or CO. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.
- (2) Facility does not participate in normal operation annual cap for VOC, NO_x, CO, SO₂, or PM₁₀. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.

Dated December 13, 2011

Emission Sources - Emission Caps and Individual Emission Limits

Flexible Permit Numbers 47256 and PSDTX402M3

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

| Air Contaminants Data | | | | |
|--|---------------------|--------------------------|------------------|---------|
| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
| | | | lb/hr | TPY** |
| Normal Operations | | | | |
| See Attachment E | See Attachment E | VOC | 1520.67 | 1893.61 |
| | | NO _x | 766.12 | 2510.50 |
| | | CO | 1256.63 | 2888.07 |
| | | SO ₂ | 1404.10 | 4624.81 |
| | | H ₂ S | 4.40 | 13.19 |
| | | PM ₁₀ | 186.08 | 364.06 |
| | | Benzene (4) | 33.12 | 80.35 |
| | | NH ₃ | 12.53 | 39.07 |
| Planned Maintenance, Startup, and Shutdown Activities | | | | |
| See Attachments A-D | See Attachments A-D | VOC | 2433.78 | 172.50 |
| | | NO _x | 157.86 | 24.36 |
| | | CO | 790.56 | 136.31 |
| | | SO ₂ | 8419.88 | 842.16 |
| | | H ₂ S | 89.57 | 9.31 |
| | | Benzene (4) | 33.12 | 2.05 |
| | | NH ₃ | 18.40 | 1.86 |
| Planned Turnaround Maintenance, Startup, and Shutdown Activities | | | | |
| See Attachments A-D | See Attachments A-D | VOC (5) | 3133.28 | 91.70 |
| | | NO _x (5) | 325.87 | 10.56 |
| | | CO (5) | 3627.58 | 75.48 |
| | | SO ₂ (5) | 8089.14 | 20.68 |
| | | H ₂ S (5) | 87.70 | 0.32 |
| | | PM ₁₀ (5) | 123.64 | 1.04 |
| | | Benzene (4) (5) | 28.05 | 0.23 |

Emission Sources - Emission Caps and Individual Emission Limits

| Air Contaminants Data | | | | |
|----------------------------|---------------------------|-------------------------------------|------------------|--------|
| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
| | | | lb/hr | TPY** |
| Individual Emission Limits | | | | |
| 34 | FCCU No. 3 | VOC | | 33.98 |
| | | PM ₁₀ /PM _{2.5} | | 299.67 |
| | | CO | | 499.23 |
| | | H ₂ SO ₄ (6) | 31.68 | 108.20 |
| | | O ₃ | 10.00 | 25.00 |
| 203 | ULC-102B Heater | VOC | | 1.44 |
| | | NO _x | | 25.55 |
| | | CO | | 19.50 |
| | | SO ₂ | | 7.13 |
| | | PM | | 1.99 |
| 205 | ULC-104BA/BB Heaters | VOC | | 4.65 |
| | | NO _x | | 104.07 |
| | | CO | | 62.87 |
| | | SO ₂ | | 22.86 |
| | | PM | | 6.43 |
| 280-118 | Tank 118 | VOC | 0.48 | 1.26 |
| | | Benzene | 0.13 | 0.07 |
| 1300 | Dock 54E Thermal Oxidizer | VOC | 0.24 | 0.14 |
| | | Benzene | 0.24 | 0.13 |
| | | NO _x | 0.69 | 0.41 |
| | | CO | 0.51 | 0.30 |
| | | SO ₂ | 0.01 | 0.01 |
| | | PM | 0.03 | 0.02 |

- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
- (2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
- NO_x - total oxides of nitrogen
- CO - carbon monoxide
- SO₂ - sulfur dioxide

Emission Sources - Emission Caps and Individual Emission Limits

| | | |
|--------------------------------|---|--|
| H ₂ S | - | hydrogen sulfide |
| H ₂ SO ₄ | - | sulfuric acid mist |
| O ₃ | - | ozone |
| PM | - | particulate matter |
| PM ₁₀ | - | particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted. |
| PM _{2.5} | - | PM equal to or less than 2.5 microns in diameter. |
| NH ₃ | - | ammonia |

- (4) The emission rates listed for the benzene cap are included in the VOC cap.
- (5) Annual emissions from planned turnaround maintenance, startup, and shutdown (MSS) activities are above and beyond the emissions from normal operations and planned MSS activities. Short-term emissions from the plant due to normal operations, planned MSS activities, and planned turnaround MSS activities should not exceed the short-term planned turnaround MSS activities emission rates.
- (6) Short term H₂SO₄ emission rate is included in the short term routine PM₁₀ cap. Annual H₂SO₄ emission rate is included in the individual annual PM emission rate for EPN 34.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

_____ Hrs/day _____ Days/week _____ Weeks/year or 8,760 Hrs/year

** Compliance with annual emission limits is based on a rolling 12-month period.

Dated February 15, 2013

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Interim Executive Director*



EPA

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 15, 2014

MR RAY BROOKS
REFINING GENERAL MANAGER
BLANCHARD REFINING COMPANY LLC
PO BOX 401
TEXAS CITY TX 77592-0401

Re: Permit Alteration
Permit Number: 47256
Blanchard Refining Company Galveston Bay Refinery
Texas City, Galveston County
Regulated Entity Number: RN102535077
Customer Reference Number: CN604166868
Account Number: GB-0004-L
Associated Permit Number: PSDTX402M3

RECEIVED - 6PDL
AIR PLANNING SEC.
14 JAN 22 PM 6:08

Dear Mr. Brooks:

This is in response to your letter received October 18, 2013, requesting alteration of the conditions and maximum allowable emission rates table (MAERT) of the above-referenced permit. We understand that you wish to remove Dock 54 and associated conditions from this permit and transfer it to Permit 2231.

Per Title 30 Texas Administrative Code § 116.721(b) [30 TAC § 116.721(b)] and based on our review, Flexible Permit Number 47256 is altered. Enclosed are the altered permit conditions and MAERT to replace those currently attached to your permit. Please attach these to your permit.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Ms. Nikki Carson at (512) 239-2057 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Ray Brooks
Page 2
January 15, 2014

Re: Permit Number: 47256

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Wilson".

Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

MPW/bc

Enclosure

cc: Director, Office of Environmental Health Pgm Air & Water Pollution Svc, Galveston County
Health District, La Marque
Air Section Manager, Region 12 - Houston
Air Permits Section Chief, New Source Review, Section (6PD-R), U.S. Environmental
Protection Agency, Region 6, Dallas

Project Number: 200413



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR QUALITY PERMIT

A Flexible Permit Is Herby Issued To
Blanchard Refining Company LLC

Authorizing the Construction and Operation of
Blanchard Refining Company Galveston Bay Refinery
Located at Texas City, Galveston County, Texas

Latitude 29° 21' 38" Longitude 94° 55' 14"



Permit: 47256 & PSDTX402M3

Revision Date: January 15, 2014

Renewal Date: July 13, 2015

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the executive director of the Texas Commission on Environmental Quality (commission) to amend this permit in that regard and such amendment is approved. It shall be unlawful for any person to vary from such representation or flexible permit provision if the change will cause a change in the method of control of emissions, the character of the emissions, or will result in a significant increase in emissions, unless application is made to the executive director to amend the flexible permit in that regard and such amendment is approved by the executive director. [Title 30 Texas Administrative Code 116.721 (30 TAC 116.721)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** The start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.715(c)(2)]
4. **Start-up Notification.** The appropriate regional office of the commission and any local program having jurisdiction shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. Phased construction, which may involve a series of facilities commencing operations at different times, shall provide separate notification for the commencement of operations for each facility. Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program).
5. **Sampling Requirements.** If sampling of stacks or process vents is required, the flexible permit holder shall contact the commission's Engineering Services Section, Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the appropriate regional office of the commission. The flexible permit holder is also responsible for providing

sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.715(c)(4)]

6. **Equivalency of Methods.** It shall be the responsibility of the flexible permit holder to demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the flexible permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.715(c)(5)]
7. **Recordkeeping.** A copy of the flexible permit along with information and data sufficient to demonstrate continuous compliance with the emission caps and individual emission limitations contained in the flexible permit shall be maintained in a file at the plant site and made available at the request of personnel from the commission or any air pollution control program having jurisdiction. For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the permit holder in the permit application. This information may include, but is not limited to, emission cap and individual emission limitation calculations based on a 12-month rolling basis and production records and operating hours. Additional recordkeeping requirements may be specified in special conditions attached to the flexible permit. Information in the file shall be retained for at least two years following the date that the information or data is obtained. [30 TAC 116.715(c)(6)]
8. **Maximum Allowable Emission Rates.** A flexible permit covers only those sources of emissions and those air contaminants listed in the table entitled "Emission Sources, Emissions Caps and Individual Emission Limitations" attached to the flexible permit. Flexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit. [30 TAC 116.715(c)(7)]
9. **Emission Cap Readjustment.** If a schedule to install additional controls is included in the flexible permit and a facility subject to such a schedule is taken out of service, the emission cap contained in the flexible permit will be readjusted for the period the unit is out of service to a level as if no schedule had been established. Unless a special provision specifies the method of readjustment of the emission cap, a permit alteration shall be obtained. [30 TAC 116.715(c)(8)]
10. **Maintenance of Emission Control.** The facilities covered by the flexible permit shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. Notification for emissions events and scheduled maintenance shall be made in accordance with 30 TAC 101.201 and 101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping). [30 TAC 116.715(c)(9)]
11. **Compliance with Rules.** Acceptance of a flexible permit by a permit applicant constitutes an acknowledgment and agreement that the holder will comply with all Rules, Regulations, and Orders of the commission issued in conformity with the Texas Clean Air Act (TCAA) and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or flexible permit condition are applicable, then the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the flexible permit. [30 TAC 116.715(c)(10)]
12. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
13. **There** may be additional special conditions attached to a flexible permit upon issuance or amendment of the permit. Such conditions in a flexible permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.715(d)]
14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
15. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit

Special Conditions

Flexible Permit Numbers 47256 and PSDTX402M3

Special Condition Nos. 5 through 56 apply to the normal operations of the facilities authorized under this permit. Special Condition Nos. 57 through 68 apply to the planned maintenance, startup, and shutdown activities authorized by this permit.

Emission Caps and Individual Limitations

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Emission Caps and Individual Emission Limitations," (ECIELT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the ECIELT and other requirements specified in the special conditions.

Planned startup and shutdown emissions due to the activities identified in Special Condition No. 57 are authorized from facilities and emission points identified in Attachment D in other construction permits at the site provided the facility and emissions are compliant with the respective ECIELT and special conditions, or Special Condition No. 66 of this permit. **(8/10)**

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U. S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, and:
 - A. Sulfuric Acid (H_2SO_4) Production Units, Subpart Cd;
 - B. H_2SO_4 Plants, Subpart H;
 - C. Petroleum Refineries, Subpart J (**per Agreed Order Docket No. 2005-0224-AIR-E**);
 - D. Storage Vessels for Petroleum Liquids, Subpart K;
 - E. Volatile Organic Liquid Storage Vessels, Subpart Kb; and
 - F. Equipment Leaks of Volatile Organic Compounds (VOC) in Petroleum Refineries, Subpart GGG. **(8/10)**
3. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) in 40 CFR Part 61, Subparts A, and:
 - A. Equipment Leaks of Benzene, Subpart J;
 - B. Equipment Leaks, Subpart V;
 - C. Benzene Transfer Operations, Subpart BB; and

- D. Benzene Waste Operations, Subpart FF.
- 4. These facilities shall comply with all applicable requirements of EPA regulations on NESHAPS in 40 CFR Part 63, Subparts A, and:
 - A. Petroleum Refineries, Subparts CC;
 - B. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recover Units, Subpart UUU; and
 - C. Marine Vessel Loading Operations, Subpart Y.

Operational Limitations, Work Practices, and Plant Design

- 5. Storage tanks are subject to the following requirements: The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
 - A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal. Installation of equivalent control requires prior review and approval by the Texas Commission on Environmental Quality (TCEQ) Executive Director.
 - B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.
 - C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
 - D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (API) Code 650, or an equivalent degree of flotation, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

The floating roof design for all new or retrofitted roofs shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 or

later except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

- E. Except for labels, logos, etc. not to exceed fifteen (15) percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum except where a dark color is necessary to help the tank absorb or retain heat in order to maintain the material in the tank in a liquid state. The following existing tanks are exempt from the white or aluminum requirement: Fixed-Roof Tanks 41, 42, 59, 60, 60A, 73, 73A, 1012, and 1013. Storage tanks must be equipped with permanent submerged fill pipes. **(10/13)**
- F. The permit holder shall maintain records which includes tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. **(8/10)**
- 6. Pressure tanks shall be maintained such that there are no emissions of VOC to the atmosphere during normal operating conditions (including filling operations). If emissions occur during normal operations, they shall be routed to a flare which achieves at least 98 percent destruction efficiency.
- 7. Marine vessel loading operations at this facility are limited to the handling of gasolines, gasoline blending components, gasoline boiling range products, toluene, benzene, distillates, and black oils. Benzene shall only be loaded at one dock at any time, including the docks authorized in this permit and Dock 54E, authorized in Permit No. 2231. **(1/14)**
- 8. [reserved] **(1/14)**
- 9. Loading emissions from marine loading operations at docks other than Dock 54E shall be routed to thermal oxidizers (EPNs 294-1, 294-2, and 294-3). These thermal oxidizers shall operate at a minimum VOC destruction efficiency of 99 percent by weight and operate with greater than a stoichiometric quantity of air at all times. During loading operations, the minimum operating temperature of the thermal oxidizers shall be 1250°F. Records of thermal oxidizer operating temperatures shall be kept for each loading operation. **(11/13)**
- 10. Loading rates at the marine docks other than Dock 54 shall be reduced as needed in the event that two of the thermal oxidizers are inoperable. Loading of hydrocarbons with a true vapor pressure of greater than or equal to 0.5 psia at maximum temperature shall cease in the event that all thermal oxidizers are inoperable. Records shall be kept for each loading operation and shall include the name and quantity of material loaded. Operation without visible liquid leaks or spills shall be maintained at all loading/unloading facilities, regardless of vapor pressure. **(2/13)**

11. The holder of this permit shall maintain marine vessel loading equipment in such a manner that vapor-tight connections are made between the dock and the marine vessel. A blower system shall be installed which will produce a vacuum during vapor controlled loading operations (liquid VOC vapor pressure greater than or equal to 0.50 psia). Should the blower system cease operating for any reason, loading operations shall cease immediately. The vacuum system shall be repaired before loading operations can resume. A pressure/vacuum gauge shall be installed such that a negative pressure can be verified in the vessel and/or compartment being loaded. The vacuum shall be recorded every 15 minutes when loading. A vacuum of at least three inches of water shall be maintained during loading. Records of all blower system repairs and associated downtime shall be maintained. **(2/13)**
12. The marine dock thermal oxidizers shall be equipped with an automatic ignition system that assures gas ignition before loading and provides immediate notification of appropriate personnel when the ignition system ceases to function.
13. Uncontrolled loading of marine vessels without the use of vapor control is allowable under this permit for those materials that have a true vapor pressure of less than 0.50 psia at the actual loading temperature, provided that all applicable federal and state rules and regulations are met.
14. All flares shall be designed and operated in accordance with the following requirements:
 - A. The combined refinery fuel natural gas and waste stream to the flare shall meet the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions. Compliance with this condition shall be demonstrated by monitoring required in Paragraph D of this condition. Flare testing per 40 CFR § 60.18(f) may be requested by the TCEQ Houston Regional Office, in addition to New Source Performance Standards (NSPS) or federal requirements, to demonstrate compliance with this condition. Testing to confirm the heating value (Btu per standard cubic feet [scf]) may be requested by the TCEQ Houston Regional Office to demonstrate compliance with this condition.
 - B. The flare(s) shall be operated with a pilot flame present at all times and have a constant pilot flame or an automatic re-ignition system. The pilot flame shall be monitored by a thermocouple or an infrared monitor.
 - C. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare (for steam-assisted flares). The permit holder shall ensure proper flare operation through monitoring by Paragraph D of this condition.
 - D. The holder of this permit shall install a continuous flow monitor that provides a record of the vent stream flow to the flare. The flow monitor sensor should be installed in the vent stream such that the total vent stream to the flare is measured. The average hourly values of the flow shall be recorded and maintained electronically. The holder of this permit shall provide the daily average flow rate (24-

hour average) to each flare. These monitors shall be operational no later than July 13, 2010.

The holder of this permit shall conduct an analysis (grab sample) of the flare composition (total VOC, benzene, hydrogen sulfide (H₂S), and Btu content) on or before May 31, 2007. The analysis shall be conducted on a semiannual basis (once during the summer months and once during the winter months). The holder of this permit may submit a request to the TCEQ Houston Regional Office to reduce the sampling frequency. The sampling shall be conducted such that the total vent stream to the flare is included in the analysis. Records of the grab sampling results, including flare identification number, sampling date, sampling location, flare composition, and calculated net heating value in Btu/scf for each flare, shall be maintained. **(PSD) (9/06)**

15. Safety relief valves that discharge to the atmosphere only as a result of fire shall be equipped with a rupture disc and pressure gauge. The pressure gauge shall be installed between the relief valve and the rupture disc to monitor disc integrity.

Atmospheric relief valves which are not equipped with a rupture disc shall be monitored for leaks on a quarterly basis with an approved gas analyzer beginning no later than July 13, 2007. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves which are not equipped with a rupture disc and pressure gauge or pressure transmitting device.

All leaking discs shall be replaced at the earliest opportunity, but no later than the next unit shutdown. Discs to be replaced shall be identified on an equipment list, and this list shall be made available to TCEQ or local air pollution control program representative.

Records of quarterly atmospheric relief valve monitoring results, including the relief valve identification, monitoring date, monitoring result, disk replacement or installation date, and next unit shutdown date after leak discovery shall be maintained. **(8/10)**

Sulfur Recovery/Amine Treating Units

16. The minimum sulfur recovery efficiency for these permitted units shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered}) * (100)}{(\text{S acid gas})}$$

Where:

| | | |
|-------------|---|---|
| Efficiency | = | sulfur recovery efficiency, percent |
| S recovered | = | (S acid gas - S stack, or S produced), long tons per day (LTPD) |
| S acid gas | = | (S recovered plus S stack), LTPD |
| S stack | = | sulfur in incinerator stack, LTPD |

The average sulfur emission reduction efficiency (sulfur recovery efficiency) shall be demonstrated for each 24-hour period by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide (SO₂) monitor, sulfur production records, stack mass flow rate, and other process flow data. Records of the calculated recovery efficiency, sulfur in the incinerator stack, sulfur produced, sulfur in the acid gas, the compliance calculations, and a detailed example of the compliance calculations shown above shall be maintained on-site. The sulfur recovery efficiency of this condition is not applicable during start-up, shutdown, or upset conditions if proper procedures of 30 TAC Chapter 101 are followed. **(PSD)**

17. The total sulfur recovered from the combined SRU Trains (Trains 1 through 4) shall not exceed 1300 LTPD of sulfur (based on a 24-hour period). At no time during normal operation shall the excess capacity be less than 75 percent redundancy. **(PSD)**
18. The SRU thermal reactors that receive ammonia acid gas from the sour water stripper overheads shall at all times be operated with a stable flame, and the SRUs shall operate with a flame temperature within recommended design specifications, but shall operate at no less than 2000°F. The flame temperature of each SRU thermal reactor shall be continuously monitored and recorded.
19. All acid gas streams from the amine regeneration units, and sour water stripper overheads, containing H₂S shall be routed to the SRUs or other process units under normal operating conditions. It is not permissible under any conditions to vent acid gases directly to the atmosphere. **(PSD)**
20. Emissions from the sulfur pits, sulfur storage, and sulfur loading operations shall be collected by a vapor collection system and routed either back to the SRU thermal reactor or to the SRU Tail Gas Incinerator (TGI). **(PSD)**
21. The minimum firebox chamber temperatures in the SRU TGIs shall not go below 1200°F during normal operating conditions. If stack testing in the TGI exhaust indicates that a higher temperature is necessary to obtain a minimum H₂S and VOC destruction efficiency of 99.9 percent, then the temperature obtained during the stack test will become the new minimum incinerator firebox chamber temperature. The firebox temperature of each TGI shall be continuously monitored and recorded.
22. The SRU TGIs shall operate with no visible emissions except for uncombined steam.
23. Contingency Plan for the SRU

Should there be loss of sulfur recovery potential from the Claus trains, TGTU, or TGIs, any combination of the following steps shall be taken as soon as possible, but no later than two hours from the start of the event:

- A. Reroute the maximum amount of acid gas to the operating SRUs or equipment (such as the remaining sulfur recovery trains, TGTU, and TGI). This action can include increasing the oxygen (O₂) injection rate to add SRU capacity.

- B. Reroute any remaining acid gas to the TGIs. If the TGIs are not operable, the acid gas should be routed to the emergency flares.
- C. Shut down the sour water strippers and accumulate sour water in tankage for future processing.
- D. Reduce production, reduce charge rates at upstream units, and switch to lower-sulfur purchased gas oils and crude oils as necessary to reduce the amine loading and cease acid gas flaring within eight hours of the event. This action may include shutting down one and/or all units which supply acid gas to the SRU complex.
- E. Any other action not listed that will allow the SRU to recover from the loss of sulfur recovery potential. All actions conducted under this paragraph shall be documented. The documentation shall include the specific action taken, time the action was taken, effect on upstream/downstream facilities (heaters, other control devices, etc.), and overall effect on emissions from the SRU or other facilities. This documentation shall be included in any reports submitted to the TCEQ Houston Regional Office or local air pollution control program representative. This information shall also be maintained on-site and made available to TCEQ or local air pollution control program representatives upon request.

The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.

- 24. Records shall be maintained for all SRU, Tail Gas Treating Unit (TGTU), and TGI downtime. These records shall include the date and duration of downtime, amount of bypassed acid gas flared, the cause of the downtime, and corrective action taken. The permit holder shall meet the recordkeeping and reporting requirements of 30 TAC §§ 101.201 and 101.211 in addition to this permit condition.
- 25. The sour water stripper system feeding the SRUs shall have a minimum on-line retention and separation (hold up) time of three days based on normal operational levels and maximum expected feed rates.
- 26. The retention time of the rich amine and lean amine drums shall meet at least 30 minutes of retention at maximum production levels.

FCCUs

- 27. The final emission caps are based on FCCUs 1 and 3 (Emission Point Nos. [EPNs] 93 and 34) meeting the following concentrations, averaged over a one-hour period.

| | |
|-----------------------------------|----------|
| carbon monoxide (CO) | 500 ppmv |
| SO ₂ | 200 ppmv |
| nitrogen oxide (NO _x) | 200 ppmv |
| VOC | 10 ppmv |

The initial emission caps are based on the following: 500 ppmv CO, and 300 ppmv SO₂ from FCCU 1, and 500 ppmv CO from FCCU 3. **(PSD) (10/10)**

28. The final emission caps are based on the FCCU 1 stack meeting 1.0 pound of particulate matter (PM) per 1,000 pounds of coke burn-off. The final hourly emission cap and individual annual emission limit for FCCU 3 are based on the FCCU stack meeting 0.914 pounds of PM per 1,000 pounds of coke burn-off. The individual hourly and annual emission limits for FCCU 3 are based on the FCCU 3 stack meeting 0.33 pounds of H₂SO₄ per 1,000 pounds of coke burn-off. The PM and H₂SO₄ emissions will be measured per the EPA Methods 5B and 8/TCEQ 24 or other applicable method approved by the TCEQ). **(PSD) (12/11)**
29. For the final ammonia emission cap, the FCCU 1 electrostatic precipitator shall not exceed 10 ppmv ammonia slip. The ammonia injection rate to the FCCU shall be continuously monitored and recorded. **(12/11)**
30. The opacity of emissions from the FCCUs shall not exceed 20 percent averaged over a six minute period, as determined by an opacity monitoring device or trained observer, except as provided for in 30 TAC § 111.111(a)(1)(E).
31. The seven-day rolling average of NO_x and SO₂ concentration limits below shall not apply during periods of start-up, shutdown, or malfunction. **(10/10)**

A. FCCU 1 NO_x Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a NO_x limit of 40 ppmvd at zero percent O₂ on a 365-day rolling average and 80 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average NO_x limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

B. FCCU 3 NO_x Concentration Limits

If the permit holder has installed a selective catalytic reduction (SCR) unit on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 20 ppmvd at zero percent O₂ on a 365-day rolling average and 40 ppmvd at zero percent O₂ on a 7-day rolling average basis.

If the permit holder has not installed an SCR on FCCU 3, then beginning July 1, 2007, FCCU 3 shall comply with a NO_x limit of 30 ppmvd at zero percent O₂ on a 365-day rolling average and 60 ppmvd at zero percent O₂ on a 7-day rolling average basis.

The seven-day rolling average may increase temporarily to 120 ppmvd if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder submits

and EPA approves a report detailing reasons for the outage(s) of the SCR or NO_x control device within 30 days after the outage occurs. The outages can only be due to reasons other than startup, shutdown or malfunction.

C. FCCU 1 SO₂ Concentration Limits

Beginning October 7, 2005, FCCU 1 shall comply with a SO₂ limit of 50 ppmvd at zero percent O₂ on a 365-day rolling average and 150 ppmvd at zero percent O₂ on a seven-day rolling average basis, except as provided below.

The seven-day rolling average SO₂ limit does not apply during periods of hydrotreater outages if, pursuant to the Consent Decree amendment issued October 7, 2005, the permit holder has submitted and EPA has approved an alternate operating plan that minimizes emissions as much as practicable through the use of (but not limited to) low sulfur feed, storage of hydrotreated feed and increase in additive rates.

D. FCCU 3 SO₂ Concentration Limits

Beginning July 1, 2007, FCCU 3 (EPN34) shall comply with a SO₂ limit of 25 ppmvd at zero percent O₂ on a 365-day rolling average and 50 ppmvd at zero percent O₂ on a 7-day rolling average basis.

32. The FCCU 3 Regenerator Scrubber (EPN 34) liquid to gas ratio and gas pressure drop shall be continuously monitored and be maintained greater than the minimum one hour average value observed in the last satisfactory stack test performed in accordance with Special Condition 39. The initial stack test for EPN 34 was completed on May 6, 2008. A subsequent stack test will be performed in accordance with Special Condition 39 upon completion of the FCCU 3 Regeneration Project proposed in the amendment, PI-1 dated April 26, 2011.

The flow rates and pressures shall be recorded every 6 minutes as six minute averages and the pH shall be recorded every 15 minutes as 15 minute averages. Each flow and pressure monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

Quality assured (or valid) data must be generated when the FCCU is operating except during the performance of a daily zero and span check, if conducted. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the FCCU operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. **(12/11)**

Fired Units (Heaters and Boilers)

33. The final emission caps are based on fuel gas (used to fire all heaters, boilers, oxidizers, incinerators, flares, and other combustion devices) having an H₂S concentration of 162 ppmv or 0.1 grain per dry standard cubic foot on a one-hour average basis. The H₂S concentration in the fuel gas system shall be continuously monitored and recorded.
(PSD) (10/10)
34. The opacity from all heaters, boilers, etc., shall not exceed 5 percent averaged over a six minute period, except for those periods described in 30 TAC § 111.111(a)(1)(E).
35. The final emissions cap is based on a combined average NO_x emission value of 0.035 lb NO_x/MMBtu from all boilers and heaters.
36. The UC-103B is limited to firing no more than 99 MMBtu/hr. Records verifying the firing rate for this unit shall be maintained on-site.

Wastewater

37. Emissions from wastewater process equipment shall be controlled as follows:
 - A. Emissions from the dissolved air flotation, gravity thickener, and API No. 2 shall be routed to a thermal oxidizer capable of obtaining a VOC destruction efficiency of 99.9 percent.
 - B. Emissions from APIs 1 and 3 shall be routed to a carbon adsorption system. The carbon adsorption system shall be installed and operating no later than July 13, 2010. The carbon adsorption system shall meet the requirements of Special Condition No. 47 of this permit.
 - C. Wastewater process equipment upstream of the biological treatment units (activated sludge) shall either be covered and/or routed to a control device (either a thermal oxidizer, flare, or carbon canister system). **(10/10)**

Initial and Periodic Sampling Requirements

38. Sampling port(s) and platforms(s) shall be incorporated into the design of the combustion source stack(s) per specifications in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Platform(s) will not be necessary for existing stacks of combustion facilities that will not be equipped with continuous emissions monitoring system (CEMS) and do not currently have platform(s) included in their design. Alternate sampling facility designs may be submitted for approval by the Executive Director of the TCEQ.
39. The holder of this permit shall perform stack sampling and other testing, as required, to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the following sources:

| |
|---|
| FCCU 1 and 3 Stacks (EPNs 93 and 34) |
| SRU TGI exhausts before the Common Stack (EPN 384) |
| Marine Dock Thermal Oxidizers (EPNs 294-1, 294-2, 294-3) |
| All boilers and heaters with firing rates of 40 MMBtu/hr or greater |
| In addition, common stacks (if any) containing units capable of 40 MMBtu/hr or greater shall also be sampled. |

The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Air Permits Division. Test waivers and alternate/equivalent procedure proposals for 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director. **(1/14)**

- A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Houston Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the listed sources to be tested for include (but are not limited to) the following:

| | |
|---------------------------------------|---|
| FCCU | NO _x , CO, SO ₂ , VOC, TSP*, PM ₁₀ *, ammonia (FCCU 1 only), H ₂ SO ₄ , and O ₂ |
| SRU TGI(s) | SO ₂ , H ₂ S, H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Boilers, Heaters, Furnaces, etc | SO ₂ , H ₂ SO ₄ , NO _x , CO, VOC, and O ₂ |
| Marine Dock Thermal Oxidizers | NO _x , CO, VOC, and O ₂ |
| Units equipped with ammonia injection | ammonia |

* TSP - total suspended particulate

* PM₁₀ - particulate matter equal to or less than 10 microns in diameter

- C. Sampling shall occur within 60 days after achieving the maximum production rate at which the facility will be operated, but no later than 180 days after start-up following modification or installation of a emission source (facility), or within 60 days after achieving normal operation (for those units being restarted due to Hurricane Rita), and other such times as determined necessary to verify compliance with the emissions cap as required by the TCEQ Houston Regional Director or the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the TCEQ Houston Regional Office.

The permit holder may submit a request to perform representative sampling for combustion units that are similar in function, heat input, etc. The request shall be submitted to, and approved by, the TCEQ Houston Regional Office before sampling begins.

- D. The EPN being tested shall operate at maximum production, loading, or firing rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the EPN is unable to operate at maximum rates during testing, then additional stack testing may be required when higher firing rates are achieved. (Additional testing will not be required if the EPN is equipped with a CEMS.)
- E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed to the TCEQ Houston Regional Office.
- F. Stack sampling for those units which are not equipped with a CEMS shall be repeated every five years after the initial sampling in conformity with A, B, and D of this condition. Facilities which are not being modified and have been tested in the last five years shall be tested within five years of the last test date (even if those sources have not been tested for VOC during previous tests).

- G. For fired units equipped with ammonia injection, the initial compliance stack test shall test for the presence of ammonia slip in the stack. After the initial stack test, grab samples for ammonia shall be conducted weekly during the first 60 days of operation. After operating procedures have been developed to prevent excess amounts of ammonia from being injected, the frequency of ammonia grab sampling can be reduced to a quarterly basis. If the grab samples exceed 10 ppmv at any time, the holder of this permit shall return to weekly ammonia sampling until such time as repairs are conducted, or the sampling indicates that the ammonia slip is 5 ppmv or less.
- H. The two FCCUs shall be stack sampled for the presence of H_2SO_4 within 60 days after achieving normal operation (after the restart due to Hurricane Rita). The holder of this permit shall submit a permit amendment application within 60 days of completing the stack sampling of the FCCUs to incorporate the H_2SO_4 into an emissions cap, or list the H_2SO_4 emissions as an individual emission limitation. If necessary, the holder of this permit shall include netting calculations, and/or Prevention of Significant Deterioration forms, tables, etc. in the amendment package. The amendment package shall include all calculations, assumptions, best available control technology (BACT) determinations, and a proposal for determining compliance with the short-term and annual emission rate or caps. FCCU 3 satisfied this condition with the PSD amendment application (PI-1 dated April 26, 2011).
- (PSD) (2/13)**
40. The holder of this permit shall submit a sampling and testing plan to the TCEQ Houston Regional Office (with a copy routed to the TCEQ Air Permits Division) for review and approval no later than September 13, 2005.

The sampling plan shall specify the sampling methods and other testing, as necessary, to establish the emissions (lb/hr and TPY) of VOC being emitted to the atmosphere from the wastewater system associated with this permit. Sampling and testing shall begin within 60 days of plan approval.

Within 30 days after completion of the sampling, copies of the sampling report shall be submitted to the following:

- One copy to the TCEQ Air Permits Division, Austin.
- One copy to the TCEQ Houston Regional Office.

Sampling of the wastewater system, as specified in this section, is waived if the permit holder determines that sufficient information is currently available to adequately model the wastewater treating system through the use of Water 8 or Water 9 wastewater model. The applicant shall submit revised emission calculations using one of these models, to the Air Permits Division for review and approval, no later than September 13, 2005 and one of the following permit applications.

- A. If the wastewater models show a decrease in the emission contribution from the wastewater treating facilities compared to the emissions obtained from using AP 42

emission factors, the holder of this permit shall submit a permit alteration to adjust emissions cap to reflect the emissions obtained from the use of the water models.

- B. If the wastewater models show an increase in emissions compared to the emissions obtained from using AP-42 emission factors, the holder of this permit shall submit a permit amendment to increase the final emissions cap. **(8/10)**

Ongoing Monitoring Requirements

- 41. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentrations of the following compounds from all of the following facilities by December 31, 2005: **(10/10)**
 - A. FCCU Stacks (EPNs 93and 34): SO₂, NO_x, CO, Opacity, and O₂
 - B. SRU TGI Stacks (EPNs 384): SO₂ and O₂.
 - C. A CEMS to measure and record the in-stack concentrations of NO_x, CO, and O₂ shall be operational and used to monitor emissions from any boiler, heater, or combustion device with a maximum firing rate greater than or equal to 100 MMBtu/hr.
 - 42. Each CEMS required by these conditions shall comply with the following:
 - A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Air Permits Division for requirements to be met.
 - B. Paragraph B(1) of this condition applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Paragraph B(2) of this condition applies to all other sources:
 - (1) The permit holder shall assure that the CEMS meets the applicable quality assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the TCEQ Houston Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Houston Regional Director.
 - (2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.
- Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1,

Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly averages concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of lb/hr at least once every week as follows:

The measured hourly average concentration from the CEMS shall be multiplied by the exhaust gas flow rate of the source (measured by true exhaust flow meters, or measured during the latest stack test performed in accordance with Special Condition No. 39, or calculated using fuel flow meters required by §117.340) to determine the hourly emission rate.

- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The TCEQ Houston Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.
- F. Quality-assured (or valid) data must be generated when the facility generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Houston Regional Director. **(PSD) (8/10)**

43. Boilers, heaters, etc., with maximum firing rates of greater than or equal to 40 MMBtu/hr and less than 100 MMBtu shall be sampled in accordance with this condition. The terms of this condition are effective upon implementation of BACT for a particular device or for combustion devices for which additional controls are not anticipated no later than July 13, 2006.

After completion of the initial stack test, the holder of this permit shall conduct annual stack tests for NO_x and CO. The stack test shall be comprised of no less than the average of three one-hour readings for each pollutant.

The results of the stack test shall be recorded in terms of ppm and converted into values of lb/hr and TPY within 30 days of sampling (unless a mass emission rate can be estimated at

the time of the test). The annual stack tests shall start after the initial stack test for each unit and shall occur during the same quarter annually. Stack tests for those boilers and heaters that will not be modified, and are not required to complete the initial stack test in the first year from the issuance of the flexible permit (because they were tested within the last five years), will be completed no later than July 13, 2006. The SO₂ emissions from the unit being tested shall also be estimated on an annual basis using the H₂S concentrations obtained from the H₂S fuel gas monitoring system and the fuel flow rate to the unit being tested.

In addition to the above testing requirements, the fuel flow rate (along with other parameters determined at the pretest meeting to be essential for monitoring a unit's performance) shall be continuously monitored and recorded. Beginning no later than September 13, 2005, the heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling.

Should the stack test from a particular unit indicate an exceedance of the short-term (lb/hr) and/or annual (TPY) emission rate used in the emission cap calculation, the applicant shall provide adequate information to demonstrate continuing compliance with the emissions cap.

Records shall be maintained indicating any exceedance of units represented firing rates. Should the firing rate of any unit exceed its permit representations (represented contribution to the emission cap), the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap. **(8/10)**

44. For boilers, heaters, etc., with maximum firing rates less than 40 MMBtu/hr, the fuel flow rate shall be continuously monitored and recorded. The heating value of the fuel (Btu/scf) shall be determined on a quarterly basis through grab sampling. In addition, H₂S concentrations shall be obtained from the H₂S fuel gas monitoring system. Records, including the flow, quarterly Btu, and H₂S, shall be maintained and used to indicate any exceedance of a unit's represented firing rate(s). Should the firing rate of any unit exceed its permit representations, the holder of this permit shall provide adequate information to demonstrate continuing compliance with the emissions cap.
45. For SRUs that handle ammonia acid gas from sour water stripper overheads, the holder of this permit may do either of the following:
 - A. The acid gas exiting the waste heat boilers shall be sampled for ammonia on a quarterly basis. When the ammonia concentration exceeds 300 ppmv, the holder of this permit shall implement procedures or actions that are needed to ensure that the sampled ammonia concentration drops below 300 ppmv by the time the next quarterly sample is taken. Drager tubes or another sampling method, as approved by the TCEQ, shall be used to sample for ammonia.
 - B. The holder of this permit shall inspect the sulfur condenser outlets (each sulfur condenser) on each SRU for the presence of ammonia salt formation or buildup. The inspections shall be conducted on an annual basis, and the TCEQ Houston Regional

Office shall be informed prior to conducting the inspection (and given the opportunity to observe the sulfur condenser inspection). If ammonia salts are present, the holder of this permit shall implement a monthly ammonia sampling frequency as described in Paragraph A of this condition and the TCEQ Houston Regional Office shall be notified within 30 days.

The sampling results shall be presented in terms of ppmv. The ammonia sampling of the acid gas exiting the SRUs, or inspections of the sulfur condensers for each SRU shall commence no later than May 13, 2006. Records of sampling/inspection time, date, and sampling/inspection results shall be maintained. **(2/13)**

46. The holder of this permit shall perform sampling and other testing as necessary to establish and demonstrate ongoing compliance with the VOC emission limits, pounds per hour (lb/hr) and tons per year (TPY), from the cooling towers. The cooling tower return water shall be monitored monthly with an approved air stripping system, or approved equivalent, when the cooling towers are in service. The minimum detection level of the testing system shall be equivalent to no more than approximately 5 ppmv. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. The results of the monitoring and maintenance efforts shall be recorded.

If a leak equivalent to more than the ppmv value listed above is detected, the owner or operator shall repair the leak as soon as practical but not later than 45 calendar days after the holder of this permit receives results of monitoring indicating a leak. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as possible. For the purposes of this permit condition, delay of repair means exceeding the 45-day time frame described above. Prior to exceeding the time frame described above, all documentation of a decision to delay repair shall be submitted to the TCEQ Houston Regional Office for review and approval.

Delay of repair on heat exchanger systems for which leaks have been detected is allowed if the equipment is isolated from the process. In addition, delay of repair is also allowed in the following situations:

- A. If repair is technically infeasible without a shutdown, and a shutdown is expected within the next two months.
- B. Delay of repair is also allowed for up to 120 calendar days if necessary parts or personnel were not available.
- C. Delay of repair is also allowed if repair is technically infeasible without a shutdown and the shutdown would cause greater emissions than the potential emissions from delaying repair. The owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair.

47. Carbon Canister Sampling. The carbon adsorption system controlling emissions from APIs 1 and 3 shall consist of a dual carbon system. **(10/10)**
- A. The carbon canisters shall be sampled and recorded, three times per week, to determine breakthrough of VOC for the dual carbon systems controlling the APIs and Lift Stations. The carbon canisters shall be sampled and recorded one time per week, to determine breakthrough of VOC for the dual carbon systems controlling Oil Water Separators (OWS) or Dry Weather Sumps (DWS) on the units in or outside battery limit (OSBL) areas. The sampling point shall be at the outlet of the first carbon bed but before the inlet to the second carbon bed.
 - B. Breakthrough shall be defined as a VOC concentration of 100 ppmv as measured as methane. When VOC breakthrough is detected, the waste gas flow shall be directed to a portable dual carbon system while the saturated carbon is replaced with fresh carbon. Sufficient fresh activated carbon shall be maintained at the site such that spent carbon can be replaced as specified.
 - C. The method of VOC sampling and analysis shall be by photo-ionization detector (PID), Ultraray, or a TCEQ equivalent as approved by the Regional Office. On each day that sampling is to occur, the analyzer shall be calibrated prior to sampling with a certified gas mixture at 100 ppmv \pm 10 percent.
 - D. Records of the carbon canister monitoring maintained at the plant site shall include (but are not limited to) the following:
 - (1) Monitoring results;
 - (2) Corrective action taken (including the time and date of that action) when breakthrough occurs; and
 - (3) Process operations at the time that breakthrough occurs. **(3/08)**

Compliance Assurance Monitoring

48. The following requirements apply to capture systems for the plant flare system and the FCCU 3 scrubber.
- A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.
 - B. The control device shall not have a bypass.
or
If there is a bypass for the control device, comply with either of the following requirements:
 - (1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a

vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

- (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals that prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, conservation vents on tanks, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

- C. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above. **(12/11)**

Leak Detection and Repair (LDAR) Programs

49. [reserved]

50. [reserved]

51. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - 28VHP **(8/10)**

Except as may be provided for in the special conditions of this permit, the following requirements apply to all fugitive components at the units authorized under this permit:

- A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68°F or (2) to piping and valves two inches nominal size and smaller or (3) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable ANSI, API, ASME, or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the line or valve must have a cap, blind flange, plug, or second valve installed, or the open-ended valve or line shall be monitored for leaks above background within 72 hours. The open-ended valve or line shall be monitored weekly thereafter with an approved gas analyzer and the results recorded. Leakage indicated by readings above background must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a) – (b).

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.
- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.
- I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the

TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

- J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
 - K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Paragraphs F through G of this condition.
 - L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations.
52. All process drains shall be instrument-monitored with an approved gas analyzer on an annual basis using a 500 ppmv leak definition. The gas analyzer shall conform to the requirements listed in 40 CFR § 60.485(a)-(b).
53. Ambient H₂S monitors shall be placed through the sulfur recovery, amine regeneration, and sour water stripper areas. These monitors shall be arranged in such a way that coverage is provided for all wind directions. The monitors shall be set to alarm at 10 ppmv and shall alarm in the control room. A plot identifying the number and location of each monitor shall be maintained in the control room handling each one of the areas described above.
54. Piping, Valves, Pumps, and Compressors in Ammonia (NH₃), H₂S, and SO₂ Service (10/10)
- A. Audio, olfactory, and visual checks for NH₃, H₂S, and SO₂ leaks within the following operating areas shall be made once per shift (once every 12 hours):

| Pollutant(s) | Operating Area(s) |
|--------------------------------------|--|
| NH ₃ | Aqueous ammonia storage and piping |
| H ₂ S and SO ₂ | SRU, sour water stripper area, amine contactor and regenerator, and hydrotreater areas handling H ₂ S and SO ₂ |

- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall:
 - (1) Stop the leak by taking the equipment out of service, or
 - (2) Bypass the equipment so that it is no longer in service, or

- (3) Isolate the leak, or
- (4) Commence repair or replacement of the leaking component.

If the leak cannot be repaired within six hours, the holder of this permit shall use clamping procedures to prevent the leak until replacement or repair can be performed.

Records shall be maintained at the plant site of all repairs and replacements made due to leaks. A reminder that visual checks for NH₃, H₂S, and SO₂ leaks need to be made once per shift shall be included in the appropriate unit operator manual no later than September 13, 2005. **(8/10)**

Emission Cap Compliance Recordkeeping

55. The holder of this permit shall use continuous emissions data, sampling data, firing rates, throughput, fill rates, etc., to perform emission calculations at least once every month in order to verify compliance with the annual (TPY) emission caps. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and TPY emissions caps and individual emission limitations and provide such demonstration of compliance to the TCEQ or local air pollution control program representatives upon request.

If any information obtained from parameter monitoring (throughput, pump rates, etc.), sampling data or continuous emission monitor (CEM) data indicates that a facility is exceeding its proposed contribution to the emissions cap (lb/hr and/or TPY), the holder of this permit shall provide adequate information to demonstrate that the lb/hr and/or TPY emissions caps were not exceeded, and that the BACT representations for the facilities contributing to the emissions CAP is being met.

For the time period between July 13, 2005, and July 31, 2005, the facilities contained in this flexible permit will show compliance with their individual emission limitations in accordance with their respective authorization, e.g., permit, exemption, permit-by-rule.

For the time period August 1, 2005 through July 31, 2006, compliance with emissions caps and individual emission limitations will be on an apportioned calendar basis (apportioned meaning that each month is allotted 1/12th of the annual emissions cap or individual emission limitation).

After July 31, 2006, compliance with the annual emission caps and individual emission limitations of this flexible permit shall be based on a rolling 12-month basis. **(8/10)**

56. Emissions from sources covered under this permit shall be determined as follows. If a source type is not listed below, the permit holder shall use the methodology which was used in the permit application.

Atmospheric Storage Tanks: Emissions for tanks shall be calculated using: (a) AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids"

and (b) the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks." Short-term emission rate shall be based on the maximum expected pumping rate (fixed-roof) and the higher of the pumping rate or withdrawal rate (IFR and EFR).

Marine Loading: AP-42 Chapter 5.2-4 (Fifth Edition) LL Equation - The collection efficiency is 100 percent collection (vacuum loading system) for all compounds equal to or greater than 0.5 psia.

Piping Fugitives: Component counts, emission factors, and reduction credits specified in the permit application for the various inspection and maintenance programs.

Boilers and Heaters: CEM information if such a device is installed. The most recent stack test results if a CEM is not installed. If no stack sampling is required, use the proper emission factor for the specific unit and the measured Btu value and flow rate of the fuel.

SRU and FCCU: CEM information. Use the most recent stack test for those compounds which are not subject to CEM requirements. **(10/10)**

Maintenance, Startup, and Shutdown (MSS) Activities

57. This permit authorizes the emissions from the facilities identified in Attachment D for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

- A. The process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
- B. The type of planned MSS activity and the reason for the planned activity;
- C. The common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

- D. The date and time of the MSS activity and its duration;
- E. The estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions authorized by this permit shall be summed monthly and the rolling 12 month emissions shall be updated on a monthly basis. **(8/10)**

58. Process units and facilities, with the exception of those identified in Special Condition Nos. 61, 62, 64, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

- A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.
- B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
- C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.
- D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from

controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of Paragraph D(2) of this condition. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) (or equivalent) per the site safety procedures.
- (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's or P&ID's may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 59. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample locations and collection systems must be located downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.

- E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:
- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.
 - (2) There is not an available connection to a plant control system (flare).
 - (3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere per Paragraph E of Special Condition No. 58 must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B.
(8/10)

59. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded.
- (2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in Subparagraph (3) of this condition, the concentration measured is at least 20 percent of the maximum range of the tube.
- (2) The tube is used in accordance with the manufacturer's guidelines.
- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) less than release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no

lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

- (3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane. **(8/10)**
- 60. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;
 - A. a cap, blind flange, plug, or second valve must be installed on the line or valve; or
 - B. the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once at the end of the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings 20 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. **(8/10)**
- 61. This permit authorizes emissions from the storage tanks identified in Attachment D during planned floating roof landings. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Emissions from change of service tank landings shall not exceed 10 tons of VOC in any rolling 12 month period. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the ECIELT. The following requirements apply to tank roof landings.
 - A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.
 - B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000

gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:

- (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.
 - (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.
 - (3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition No. 59.
 - (4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.
 - (5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.
- C. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in Paragraph D of this condition is satisfied.
- (1) Minimize air circulation in the tank vapor space.
 - (a) One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
 - (b) Access points shall be closed when not in use.
 - (2) Minimize time and VOC partial pressure.

- (a) The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psi as documented by the method specified in Paragraph D(1) of this condition;
 - (b) Blowers may be used to move air through the tank without emission control at a rate not to exceed 12,000 cubic feet per minute for no more than 12 hours. All standing liquid shall be removed from the tank during this period; and
 - (c) Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.
- D. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.
 - (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
 - (2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:
 - (a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A Appendix 1.
 - (b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 8015 from SW-846).
 - (c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1,000 ppmv through the procedure in Special Condition No. 59.
 - (3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.
- E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:
 - (1) Only one benzene tank with a landed floating roof can be filled at any time at a rate not to exceed 1,000 bbl/hr.

- (2) The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.
 - F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:
 - (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
 - (2) the reason for the tank roof landing;
 - (3) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:
 - (a) the roof was initially landed,
 - (b) all liquid was pumped from the tank to the extent practical,
 - (c) start and completion of controlled degassing, and total volumetric flow,
 - (d) all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,
 - (e) if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,
 - (f) refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and
 - (g) tank roof off supporting legs, floating on liquid.
 - (4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application, PI-1, submitted January 5, 2007.
(8/10)
62. Storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. This shall be verified and documented through one of the criteria identified in Paragraph C of Special Condition No. 61. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC partial pressure greater than 0.02 psi vapor as necessary to set up for degassing and cleaning. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of Subparagraphs B(1) through B(5) of Special Condition No. 61 and records maintained per Subparagraphs E(3)c through

E(3)e, and E(4) of Special Condition No. 61. Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia. **(8/10)**

63. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:
- A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.
 - B. Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.
 - C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.
 - (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.
 - (2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.
 - (3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by Special Condition No. 67, measured using an instrument meeting the requirements of Special Condition No. 59.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
 - D. The permit holder shall determine the vacuum truck emissions each month using the vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.
 - E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Paragraphs A through D of this condition do not apply. **(8/10)**

64. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.
- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
 - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.
 - C. These requirements do not apply to vessels storing less than 100 gallons of liquid that are closed such that the vessel does not vent to atmosphere.
 - D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
 - E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application. **(8/10)**
65. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. **(8/10)**
66. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment D during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.
- A. Combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in special conditions in other NSR permits during planned startup and shutdown if the following criteria are satisfied.
 - (1) The maximum allowable emission rates in the permit authorizing the facility are not exceeded.
 - (2) The startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.

- (3) Control devices are started and operating properly when venting a waste gas stream.
 - B. The limits identified below apply to the operations of the specified facilities during startup and shutdown.

During periods of startup of FCCU-3, the CO emissions are not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmv at 3 percent O₂ on a rolling 24-hour average basis. A CO continuous emission monitor must be properly operated and maintained. The emissions during startup can average 1,500 ppmv at 3 percent O₂ on a rolling 24-hour average basis for up to two days.
 - C. FCCU-3 is authorized to operate in hot standby mode for up to 336 hours per event as necessary to accommodate planned maintenance and repair of components associated with the unit. Torch oil combustion emissions through the wet scrubber control for EPN 34 shall be continuously monitored as required for normal operation and start up and shutdown, but the emissions shall be accounted and show compliance hourly and 12 month rolling in the Planned MSS Emissions Cap. During these periods of hot standby the CO is not required to comply with 30 TAC § 117.310(c)(1)(A), 400 ppmvd at 3 percent O₂ on a rolling 24-hour average basis. The vent emission shall not exceed a 1,500 ppmvd at 3 percent O₂ on a rolling 24-hour average basis during hot standby mode.
 - D. A record shall be maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each have been satisfied. **(4/13)**
67. Additional or temporary control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device. **(4/13)**

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

- A. Carbon Adsorption System (CAS). **(12/11)**
 - (1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.
 - (2) The CAS shall be sampled downstream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:
 - (a) CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

- (b) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.
 - (c) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.
 - (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59.
 - (4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon shall be maintained at the site to replace spent carbon such that replacements can be done in the above specified time frame.
 - (5) Records of CAS monitoring shall include the following:
 - (a) Sample time and date.
 - (b) Monitoring results (ppmv).
 - (c) Canister replacement log.
 - (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.
 - (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.
- B. Thermal Oxidizer
- (1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1,250°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

The thermal oxidizer combustion chamber exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ± 0.75 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.

- (2) As an alternative to Paragraph B(1) of this condition, the thermal oxidizer may be tested to confirm a minimum of 99 weight percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. A stack test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable EPA Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer and a summary of the testing results shall be included with the emission calculations.
- (3) As an alternative to Paragraphs B(1) and B(2) of this condition, the thermal oxidizer may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained in accordance with Special Conditions No. 59, except Paragraph C of Special Condition No. 59. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations shall be measured and inlet and outlet VOC mass rates shall be calculated on an hourly basis to confirm minimum 99 weight percents destruction efficiency or an exhaust concentration no greater than 20 ppmv.

C. Internal Combustion Engine.

- (1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.
- (2) The engine must have been stack tested with butane or propane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the

requirements of Special Condition No. 59 are also acceptable for this documentation.

The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting the requirements of Special Condition No. 59 A. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

- (3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. Flares

- (1) The heating value and velocity requirements in 40 CFR § 60.18 shall be satisfied during operations authorized by this permit.
- (2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- (3) The permit holder shall either demonstrate 40 CFR § 60.18 BTU requirements are met during the MSS flaring activity using engineering calculations or install a continuous flow monitor and either a composition analyzer that provides a record of the vent stream flow and total VOC content to the flare or a calorimeter that provides a record of the Btu content of the vent stream flow to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition or BTU content shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ± 5.0 percent, temperature monitor shall be ± 2.0 percent at absolute temperature, and pressure monitor shall be ± 5.0 mm Hg;

If a total VOC analyzer is installed, calibration of the composition analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17,

2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

If a calorimeter is installed, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12 month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes. If a total VOC analyzer is installed, hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated January 5, 2007.
(8/10)

- E. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.
- (1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.
 - (2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 59A.
 - (3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.
- F. A closed loop refrigerated vapor recovery system
- (1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

Special Conditions

Flexible Permit Numbers 47256 and PSDTX402M3

Page 38

- (2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition No. 59.
 - (3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.
68. With the exception of the ECIELT emission limits, Special Condition Nos. 57 through 67 become effective 180 days after the permit amendment received by the TCEQ on January 5, 2007, has been approved. During this period, monitoring and recordkeeping shall satisfy the requirements of Paragraphs A through D of Special Condition No. 57. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. The permit holder may maintain abbreviated records of emissions from Attachment A and B activities as allowed in Special Condition No. 57 rather than documenting all the information required by Paragraphs A through D of Special Condition No. 57.

Other Requirements

69. The FCCU1 project authorized by the alteration application, dated October 14, 2010, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 33.98 | 68.08 | 139.69 | 312.56 | 17.64 |
| 80 | B501 Furnace | 46052 | 4.33 | 3.24 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.80 | 7.54 | 2.23 | 1.02 | 1.61 |
| 384 | SRU C&D Incin | 47256 | 52.68 | 30.89 | 0.00 | 115.19 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ | SO ₂ | VOC |
|---------|----------------|--------|-------|-----------------|---------------------|-----------------|-------|
| 93 | FCCU1 | 47256 | 43.08 | 72.46 | 154.55 | 251.82 | 22.36 |
| 80 | B501 Furnace | 46052 | 4.34 | 3.25 | 1.02 | 0.60 | 0.74 |
| 521 | F1001 Reboiler | 9606 | 0.81 | 7.66 | 2.26 | 1.03 | 1.64 |
| 384 | SRU C&D Incin | 47256 | 52.69 | 30.89 | 0.00 | 115.20 | 4.29 |
| 280-11 | Tank 11 | 47256 | | | | | 15.95 |
| 280-181 | Tank 181 | 47256 | | | | | 1.99 |
| 280-26 | Tank 26 | 47256 | | | | | 14.27 |

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

70. The FCCU3 project authorized by the amendment application, dated April 26, 2011, was determined not to be subject to major new source review for CO, NO_x, PM/PM₁₀/PM_{2.5}, SO₂, or VOC by identifying projected actual emission rates for the facilities potentially affected by the project. Projected actual and baseline emission rates for the potentially affected facilities are as follows:

Baseline Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------|--------|--------|-----------------|--|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 851.73 | 173.86 | 289.77 | 199.94 | 38.61 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.44 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.86 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.26 | 26.19 | | 366.62 | 2.14 |

Projected Actual Emissions (tpy):

| EPN | FIN | Permit | CO | NO _x | PM/PM ₁₀ /PM _{2.5} | SO ₂ | VOC |
|---------|------------------------------|--------|--------|-----------------|--|-----------------|-------|
| 34 | FCCU No. 3 | 47256 | 499.23 | 109.33 | 299.67 | 190.29 | 33.98 |
| 280-13 | Tank 13 | 47256 | | | | | 6.46 |
| 280-39 | Tank 39 | 2231 | | | | | 9.45 |
| 280-16 | Tank 16 | 47256 | | | | | 2.51 |
| 280-532 | Tank 532 | 2231 | | | | | 2.58 |
| 280-533 | Tank 533 | 2231 | | | | | 3.01 |
| 280-536 | Tank 536 | 47256 | | | | | 13.83 |
| 80 | Feed Heater No. 1 | 46052 | 10.65 | 5.49 | 1.14 | 3.04 | 0.83 |
| 521 | Isostripper Reboiler Furnace | 9606 | 0.83 | 10.87 | 2.47 | 3.36 | 1.78 |
| 384 | SRU Incinerator C&D | 47256 | 378.29 | 26.19 | | 366.65 | 2.14 |

Part Four

Galveston Bay Refinery

Actual emissions from those facilities shall be monitored, recorded and reports made in accordance 30 TAC § 116.127 for the time period specified in 30 TAC § 116.127(b)(1).
(12/11)

71. The Tank 117 throughput increase project associated with the permit amendment application, PI-1 dated October 22, 2012, was determined not to be subject to major new source review by identifying projected actual emission rates for the facilities modified or potentially affected by the project. Actual emissions from tank 117 shall be monitored, recorded, and reports made in accordance with 30 TAC §116.127 for the time period specified in 30 TAC §116.127(b) (1). The projected actual rate for tank 117 is 1.55 tpy VOC.
(2/13)

Dated January 15, 2014

ATTACHMENT A

Flexible Permit Numbers 47256 and PSDTX402M3

Inherently Low Emitting Activities

| Activity | Emissions | | | | |
|--|-----------|-----------------|----|-----------------|------------------|
| | VOC | NO _x | CO | SO ₂ | H ₂ S |
| Analyzer calibration | X | X | X | X | X |
| Analyzer filter changeouts | X | | | | X |
| Carbon canister replacement | X | | | | |
| Equipment Lubrication (WD-40, etc.) | X | | | | |
| Injection quill repairs / replacement | X | | | | |
| Instrumentation repairs / replacement | X | | | | |
| Meter proving | X | | | | |
| Process Sampling | X | | | | X |
| Sight glass or level instrument maintenance / repair / replacement | X | | | | X |
| Solvent cleaning of fixed, immovable objects | X | | | | |

Dated December 13, 2011

ATTACHMENT B

Flexible Permit Numbers 47256 and PSDTX402M3

Routine Maintenance Activities

Planned MSS activities performed with work orders where the isolated system volume is less than 30 cubic feet. These include activities such as:

Pump repair/replacement
Fugitive component (valve, pipe, flange) repair/replacement
Compressor repair/replacement
Heat exchanger repair/replacement
Vessel repair/replacement

Dated December 13, 2011

ATTACHMENT C

Flexible Permit Numbers 47256 and PSDTX402M3

MSS Activity Summary

| Facilities | Description | Emissions Activity | EPN or Group |
|-------------------------------------|--|---|--------------------------------------|
| all process units | process unit shutdown/depressurize/drain | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units | process unit purge/degas/drain | vent to atmosphere | F-1000 |
| all process units | process unit startup | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to Flare or Tail Gas Incinerator | Flares and Incinerators |
| FCCU-3 | hot standby to allow ancillary equipment repair/replacement | Torch oil firing in the regenerator to maintain temperature | 34 |
| all process units and storage tanks | preparation for facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | recovery from facility/component repair/replacement | vent to flare | Flares and Incinerators |
| all process units and storage tanks | recovery from facility/component repair/replacement | vent to atmosphere | F-1000 |
| all process units and storage tanks | preparation for unit turnaround or facility/component repair/replacement | remove liquid | F-1000 |
| all floating roof storage tanks | tank roof landing | operation with landed roof | F-1000 |
| all floating roof storage tanks | degas of tank with landed roof | vent to control device | 311, 321, 331, 400, TEMP1, and TEMP2 |
| all storage tanks | tank cleaning | cleaning activity and solvents | F-1000 |
| see Attachment A | miscellaneous low emitting activities | see Attachment A | F-1000 |

Dated April 15, 2013

ATTACHMENT D

Flexible Permit Number 47256 and PSDTX402M3

Facility List

This permit authorizes emissions from the following temporary facilities used to support planned maintenance, startup, and shutdown (MSS) activities at permanent site facilities: frac tanks, containers, vacuum trucks, portable control devices identified in Special Condition No. 67 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

This permit authorizes MSS emissions from the permanent site facilities identified below. The headings for each group of facilities (Process Units, Tanks, etc.) are used in the MSS Activity Summary to identify all facilities in the respective group.

| Process Units | | |
|----------------------------------|--------------|------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Alkylate 3 Debutanizer Unit | ALKY3DB | 20850 |
| Alkylation Unit No. 2 | ALKY2 | 47256/PSDTX402M3 |
| Alkylation Unit no. 3 | ALKY3 | 9606 |
| Aromatics Recovery Unit | ARU | 2231 |
| Aromatics Unit 2 | AU2 | 2612 |
| Cat Feed Hydrotreater Unit | CFHU | 47256/PSDTX402M3 |
| Coker Residuum Preheat System | N/A | 6592 |
| Coking Complex | Coker | 2315 |
| Distillate Desulphurization Unit | DDU | 47256/PSDTX402M3 |
| Distillate Ultrafiner Facility | N/A | 47256/PSDTX402M3 |
| Docks | Docks | 47256/PSDTX402M3 |
| Dock 54 | Dock 54 | 2231 |
| Environmental Facility | ENVF | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 1 | FCCU1 | 47256/PSDTX402M3 |
| Fluid Catalytic Cracking Unit 3 | FCCU3 | 47256/PSDTX402M3 |
| Hydrocarbon Tank 537 | N/A | 1940 |
| Hydrogen Recovery Unit | HRU | 47256/PSDTX402M3 |
| Naphtha Desulphurization Unit | NDU | 46052 |
| Pipestills 3A and 3B | PS3A/B | 19599 |
| Power Station No. 2 | PWRS2 | 47256/PSDTX402M3 |
| Raffinate Splitter Tower | N/A | 47256/PSDTX402M3 |
| Resid Deasphalting Unit | RDU | 47256/PSDTX402M3 |

| Process Units | | |
|---------------------------|---------------|---------------------------|
| Unit Name | Abbreviation | NSR Permit No. |
| Resid Hydrotreating Unit | RHU | 47256/PSDTX402M3 |
| Sulfur Recovery Unit | SRU | 47256/PSDTX402M3 |
| Tank Farm | OMCC | 2231 and 47256/PSDTX402M3 |
| Ultracracker Unit | ULC ancillary | 2609 |
| Ultraformer Unit No. 3 | UU3 | 47256/PSDTX402M3 |
| Ultraformer Unit No. 4 | UU4 | 6488 |
| Wastewater Treatment Unit | WWTP | 22107 |

| Flares, Incinerators and other Control | | |
|--|--------|------------------|
| Flare or Incinerator Number | EPN | NSR Permit No. |
| Refinery Flare No. 2 | 311 | 47256/PSDTX402M3 |
| Refinery Flare No. 3 | 321 | 47256/PSDTX402M3 |
| Refinery Flare No. 4 | 331 | 47256/PSDTX402M3 |
| ULC Flare | 351A | 47256/PSDTX402M3 |
| SRU A/B Flare | 381 | 47256/PSDTX402M3 |
| SRU C/D Flare | 383 | 47256/PSDTX402M3 |
| SRU Incinerator C and D | 384 | 47256/PSDTX402M3 |
| DDU Flare | 396A | 47256/PSDTX402M3 |
| Flare 8 | 400 | 47256/PSDTX402M3 |
| CFHU Flare 1 | 501 | 47256/PSDTX402M3 |
| SRU Sour Water System Flare | FLR-SW | 47256/PSDTX402M3 |
| Ground Flare #5 | TCH-5 | 15497 |
| Flare 6 | 530 | 9606 |
| AU2 Flare | 611 | 2612 |
| Temporary Control Device No. 1 | TEMP1 | 47256/PSDTX402M3 |
| Temporary Control Device No. 2 | TEMP2 | 47256/PSDTX402M3 |
| FCCU-3 Regenerator Scrubber | 34 | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|--------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 4 | 280-4 | 47256/PSDTX402M3 |
| Tank 5 | 280-5 | 47256/PSDTX402M3 |
| Tank 7 | 280-7 | 47256/PSDTX402M3 |
| Tank 8 | 280-8 | 2231 |
| Tank 9 | 280-9 | 2231 |
| Tank 10 | 280-10 | 2231 |

Attachment D
Flexible Permit Numbers 47256 and PSDTX402M3
Page 3

| Storage Tanks | | |
|---------------|---------|---------------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 11 | 280-11 | 47256/PSDTX402M3 |
| Tank 12 | 280-12 | 47256/PSDTX402M3 |
| Tank 13 | 280-13 | 47256/PSDTX402M3 |
| Tank 13A | 280-13A | 47256/PSDTX402M3 |
| Tank 14 | 280-14 | 47256/PSDTX402M3 |
| Tank 14A | 280-14A | 47256/PSDTX402M3 |
| Tank 16 | 280-16 | 47256/PSDTX402M3 |
| Tank 17 | 280-17 | 47256/PSDTX402M3 |
| Tank 18 | 280-18 | 47256/PSDTX402M3 |
| Tank 19 | 280-19 | 2231 |
| Tank 20 | 280-20 | 2231 |
| Tank 22 | 280-22 | 47256/PSDTX402M3 |
| Tank 23 | 280-23 | 47256/PSDTX402M3 |
| Tank 24 | 280-24 | 47256/PSDTX402M3 |
| Tank 25 | 280-25 | 47256/PSDTX402M3 |
| Tank 26 | 280-26 | 47256/PSDTX402M3 |
| Tank 27 | 280-27 | 47256/PSDTX402M3 |
| Tank 28 | 280-28 | 2231 |
| Tank 29 | 280-29 | 2231 |
| Tank 30 | 280-30 | 2231 |
| Tank 31 | 280-31 | 47256/PSDTX402M3 |
| Tank 32 | 280-32 | 47256/PSDTX402M3 |
| Tank 34 | 280-34 | 47256/PSDTX402M3 |
| Tank 36 | 280-36 | 2231 |
| Tank 37 | 280-37 | 2231 and 47256/PSDTX402M3 |
| Tank 38 | 280-38 | 2231 and 47256/PSDTX402M3 |
| Tank 39 | 280-39 | 2231 |
| Tank 41 | 280-41 | 47256/PSDTX402M3 |
| Tank 42 | 280-42 | 47256/PSDTX402M3 |
| Tank 43 | 280-43 | 47256/PSDTX402M3 |
| Tank 43A | 280-43A | 47256/PSDTX402M3 |
| Tank 44 | 280-44 | 47256/PSDTX402M3 |
| Tank 45 | 280-45 | 47256/PSDTX402M3 |
| Tank 46 | 280-46 | 47256/PSDTX402M3 |
| Tank 47 | 280-47 | 47256/PSDTX402M3 |
| Tank 48 | 280-48 | 47256/PSDTX402M3 |
| Tank 48A | 280-48A | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 49 | 280-49 | 47256/PSDTX402M3 |
| Tank 50 | 280-50 | 47256/PSDTX402M3 |
| Tank 51 | 280-51 | 47256/PSDTX402M3 |
| Tank 52 | 280-52 | 47256/PSDTX402M3 |
| Tank 53 | 280-53 | 47256/PSDTX402M3 |
| Tank 54 | 280-54 | 47256/PSDTX402M3 |
| Tank 55 | 280-55 | 47256/PSDTX402M3 |
| Tank 56 | 280-56 | 47256/PSDTX402M3 |
| Tank 57 | 280-57 | 47256/PSDTX402M3 |
| Tank 59 | 280-59 | 47256/PSDTX402M3 |
| Tank 60 | 280-60 | 47256/PSDTX402M3 |
| Tank 60A | 280-60A | 47256/PSDTX402M3 |
| Tank 61 | 280-61 | 47256/PSDTX402M3 |
| Tank 63 | 280-63 | 47256/PSDTX402M3 |
| Tank 64 | 280-64 | 47256/PSDTX402M3 |
| Tank 65 | 280-65 | 47256/PSDTX402M3 |
| Tank 66 | 280-66 | 47256/PSDTX402M3 |
| Tank 67 | 280-67 | 47256/PSDTX402M3 |
| Tank 71 | 280-71 | 47256/PSDTX402M3 |
| Tank 72 | 280-72 | 47256/PSDTX402M3 |
| Tank 73 | 280-73 | 47256/PSDTX402M3 |
| Tank 73A | 280-73A | 47256/PSDTX402M3 |
| Tank 80 | 280-80 | 47256/PSDTX402M3 |
| Tank 90 | 280-90 | 47256/PSDTX402M3 |
| Tank 91 | 280-91 | 47256/PSDTX402M3 |
| Tank 92 | 280-92 | 47256/PSDTX402M3 |
| Tank 93 | 280-93 | 47256/PSDTX402M3 |
| Tank 94 | 280-94 | 47256/PSDTX402M3 |
| Tank 95 | 280-95 | 47256/PSDTX402M3 |
| Tank 97 | 280-97 | 47256/PSDTX402M3 |
| Tank 98 | 280-98 | 47256/PSDTX402M3 |
| Tank 100 | 280-100 | 47256/PSDTX402M3 |
| Tank 101 | 280-101 | 2231 |
| Tank 102 | 280-102 | 2231 |
| Tank 103 | 280-103 | 47256/PSDTX402M3 |
| Tank 103A | 280-103A | 47256/PSDTX402M3 |
| Tank 104 | 280-104 | 47256/PSDTX402M3 |

Attachment D
Flexible Permit Numbers 47256 and PSDTX402M3
Page 5

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 105 | 280-105 | 47256/PSDTX402M3 |
| Tank 106 | 280-106 | 47256/PSDTX402M3 |
| Tank 107 | 280-107 | 2231 |
| Tank 108A | 280-108A | 2231 |
| Tank 110 | 280-110 | 47256/PSDTX402M3 |
| Tank 111 | 280-111 | 2231 |
| Tank 112 | 280-112 | 2231 |
| Tank 113 | 280-113 | 2231 |
| Tank 114 | 280-114 | 2231 |
| Tank 115 | 280-115 | 2231 |
| Tank 116 | 280-116 | 2231 |
| Tank 117 | 280-117 | 47256/PSDTX402M3 |
| Tank 117A | 280-117A | 47256/PSDTX402M3 |
| Tank 118 | 280-118 | 47256/PSDTX402M3 |
| Tank 127 | 280-127 | 47256/PSDTX402M3 |
| Tank 128 | 280-128 | 47256/PSDTX402M3 |
| Tank 129 | 280-129 | 47256/PSDTX402M3 |
| Tank 130 | 280-130 | 47256/PSDTX402M3 |
| Tank 131 | 280-131 | 47256/PSDTX402M3 |
| Tank 140 | 280-140 | 47256/PSDTX402M3 |
| Tank 181 | 280-181 | 47256/PSDTX402M3 |
| Tank 183 | 280-183 | 2231 |
| Tank 184 | 280-184 | 2231 |
| Tank 185 | 280-185 | 2231 |
| Tank 186 | 280-186 | 2231 |
| Tank 187 | 280-187 | 2231 |
| Tank 188 | 280-188 | 2231 |
| Tank 269 | 280-269 | 47256/PSDTX402M3 |
| Tank 269A | 280-269A | 47256/PSDTX402M3 |
| Tank 270 | 280-270 | 47256/PSDTX402M3 |
| Tank 295 | 280-295 | 47256/PSDTX402M3 |
| Tank 296 | 280-296 | 47256/PSDTX402M3 |
| Tank 297 | 280-297 | 47256/PSDTX402M3 |
| Tank 298 | 280-298 | 47256/PSDTX402M3 |
| Tank 501 | 280-501 | 47256/PSDTX402M3 |
| Tank 502 | 280-502 | 47256/PSDTX402M3 |
| Tank 503 | 280-503 | 47256/PSDTX402M3 |

| Storage Tanks | | |
|---------------|-----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 504 | 280-504 | 47256/PSDTX402M3 |
| Tank 520 | 280-520 | 2231 |
| Tank 528 | 280-528 | 47256/PSDTX402M3 |
| Tank 529 | 280-529 | 47256/PSDTX402M3 |
| Tank 530 | 280-530 | 47256/PSDTX402M3 |
| Tank 531 | 280-531 | 47256/PSDTX402M3 |
| Tank 532 | 280-532 | 2231 |
| Tank 533 | 280-533 | 2231 |
| Tank 534 | 280-534 | 2231 |
| Tank 535 | 280-535 | 2231 |
| Tank 536 | 280-536 | 47256/PSDTX402M3 |
| Tank 537 | 280-537 | 1940 |
| Tank 538 | 280-538 | 2231 |
| Tank 560 | 280-560 | 47256/PSDTX402M3 |
| Tank 561 | 280-561 | 47256/PSDTX402M3 |
| Tank 608-F | 108-608 | 2231 |
| Tank 609-F | 108-609 | 2231 |
| Tank 652 | 280-652 | 47256/PSDTX402M3 |
| Tank 653 | 280-653 | 47256/PSDTX402M3 |
| Tank 1004 | 280-1004 | 47256/PSDTX402M3 |
| Tank 1004A | 280-1004A | 47256/PSDTX402M3 |
| Tank 1011 | 76 | 6592 |
| Tank 1012 | 480-1012 | 47256/PSDTX402M3 |
| Tank 1013 | 480-1013 | 47256/PSDTX402M3 |
| Tank 1018 | 280-1018 | 47256/PSDTX402M3 |
| Tank 1020 | 280-1020 | 47256/PSDTX402M3 |
| Tank 1021 | 280-1021 | 47256/PSDTX402M3 |
| Tank 1023 | 280-1023 | 47256/PSDTX402M3 |
| Tank 1024 | 280-1024 | 47256/PSDTX402M3 |
| Tank 1025 | 280-1025 | 47256/PSDTX402M3 |
| Tank 1039 | 280-1039 | 47256/PSDTX402M3 |
| Tank 1041 | 280-1041 | 2231 |
| Tank 1042 | 280-1042 | 2231 |
| Tank 1044 | 280-1044 | 2231 |
| Tank 1045 | 280-1045 | 47256/PSDTX402M3 |
| Tank 1046 | 280-1046 | 47256/PSDTX402M3 |
| Tank 1047 | 280-1047 | 47256/PSDTX402M3 |

Attachment D
Flexible Permit Numbers 47256 and PSDTX402M3
Page 7

| Storage Tanks | | |
|---------------|----------|------------------|
| Tank Number | EPN | NSR Permit No. |
| Tank 1048 | 280-1048 | 47256/PSDTX402M3 |
| Tank 1051 | 280-1051 | 47256/PSDTX402M3 |
| Tank 1052 | 280-1052 | 4714 |
| Tank 1053 | 280-1053 | 4714 |
| Tank 1055 | 280-1055 | 47256/PSDTX402M3 |
| Tank 3010 | 280-3010 | 47256/PSDTX402M3 |
| Tank 4000 | 280-4000 | 47256/PSDTX402M3 |
| Tank 4011 | 280-4011 | 47256/PSDTX402M3 |
| Tank 4016 | 280-4016 | 47256/PSDTX402M3 |

Dated January 15, 2014

ATTACHMENT E

Flexible Permit Numbers 47256 and PSDTX402M3

Emission Points included in Normal Operation Emission Caps

This table indicates the emission caps which normal operations emissions from an emission point are included in.

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|--------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 33 | FCCU 3 404B Heater | X | X | X | X | | X | | |
| 34 | FCCU No. 3 (1) | X | X | X | X | | X | | |
| 61 | FCCU 2 BA201 Heater | X | X | X | X | | X | | |
| 78 | Coker Feed Preheater B302 | X | X | X | X | | X | | |
| 93 | FCCU No. 1 | X | X | X | X | | X | | X |
| 161 | 301-B Reheat Heaters | X | X | X | X | | X | | |
| 162 | 302-B Reheat Heaters | X | X | X | X | | X | | |
| 164 | UU3 304-B Regeneration Flue Gas Heater | X | X | X | X | | X | | |
| 165 | UU3 305-B Hot Oil Heater | X | X | X | X | | X | | |
| 167 | UU3 306-B Preheat Heater | X | X | X | X | | X | | |
| 168 | 307-A/B Desulfurizer Heater | X | X | X | X | | X | | |
| 169 | UU3 308-B Process Heater | X | X | X | X | | X | | |
| 195-F | HUF Fugitives | X | | | | | | X | |
| 201 | ULC 100B Heater | X | X | X | X | | X | | |
| 202 | ULC 101B Heater | X | X | X | X | | X | | |
| 203 | ULC 102B Heater (2) | X | X | X | X | | X | | |
| 204 | ULC 103B Heater | X | X | X | X | | X | | |
| 205 | ULC 104BA Heater (2) | X | X | X | X | | X | | |
| 205 | ULC 104BB Heater (2) | X | X | X | X | | X | | |
| 206 | ULC 105BA Heater | X | X | X | X | | X | | |
| 206 | ULC 105BB Heater | X | X | X | X | | X | | |
| 280-4 | Tank 4 | X | | | | | | X | |
| 280-5 | Tank 5 | X | | | | | | X | |
| 280-11 | Tank 11 | X | | | | | | X | |
| 280-12 | Tank 12 | X | | | | | | X | |

Attachment E
Flexible Permit Numbers 47256 and PSDTX402M3
Page 2

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-13 | Tank 13 | X | | | | | | X | |
| 280-13A | Tank 13A | X | | | | | | X | |
| 280-14 | Tank 14 | X | | | | | | X | |
| 280-14A | Tank 14A | X | | | | | | X | |
| 280-16 | Tank 16 | X | | | | | | X | |
| 280-17 | Tank 17 | X | | | | | | X | |
| 280-18 | Tank 18 | X | | | | | | X | |
| 280-22 | Tank 22 | X | | | | | | X | |
| 280-23 | Tank 23 | X | | | | | | X | |
| 280-24 | Tank 24 | X | | | | | | X | |
| 280-25 | Tank 25 | X | | | | | | X | |
| 280-26 | Tank 26 | X | | | | | | X | |
| 280-27 | Tank 27 | X | | | | | | X | |
| 280-31 | Tank 31 | X | | | | | | X | |
| 280-32 | Tank 32 | X | | | | | | X | |
| 280-34 | Tank 34 | X | | | | | | X | |
| 280-37 | Tank 37 | X | | | | | | X | |
| 280-38 | Tank 38 | X | | | | | | X | |
| 280-41 | Tank 41 | X | | | | | | X | |
| 280-42 | Tank 42 | X | | | | | | X | |
| 280-43 | Tank 43 | X | | | | | | X | |
| 280-43A | Tank 43A | X | | | | | | X | |
| 280-44 | Tank 44 | X | | | | | | X | |
| 280-45 | Tank 45 | X | | | | | | X | |
| 280-46 | Tank 46 | X | | | | | | X | |
| 280-47 | Tank 47 | X | | | | | | X | |
| 280-48 | Tank 48 | X | | | | | | X | |
| 280-48A | Tank 48A | X | | | | | | X | |
| 280-49 | Tank 49 | X | | | | | | X | |
| 280-50 | Tank 50 | X | | | | | | X | |
| 280-51 | Tank 51 | X | | | | | | X | |

Attachment E
Flexible Permit Numbers 47256 and PSDTX402M3
Page 3

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-52 | Tank 52 | X | | | | | | X | |
| 280-53 | Tank 53 | X | | | | | | X | |
| 280-54 | Tank 54 | X | | | | | | X | |
| 280-55 | Tank 55 | X | | | | | | X | |
| 280-56 | Tank 56 | X | | | | | | X | |
| 280-57 | Tank 57 | X | | | | | | X | |
| 280-59 | Tank 59 | X | | | | | | X | |
| 280-60 | Tank 60 | X | | | | | | X | |
| 280-60A | Tank 60A | X | | | | | | X | |
| 280-61 | Tank 61 | X | | | | | | X | |
| 280-63 | Tank 63 | X | | | | | | X | |
| 280-64 | Tank 64 | X | | | | | | X | |
| 280-65 | Tank 65 | X | | | | | | X | |
| 280-66 | Tank 66 | X | | | | | | X | |
| 280-67 | Tank 67 | X | | | | | | X | |
| 280-71 | Tank 71 | X | | | | | | X | |
| 280-72 | Tank 72 | X | | | | | | X | |
| 280-73 | Tank 73 | X | | | | | | X | |
| 280-73A | Tank 73A | X | | | | | | X | |
| 280-80 | Tank 80 | X | | | | | | X | |
| 280-90 | Tank 90 | X | | | | | | X | |
| 280-91 | Tank 91 | X | | | | | | X | |
| 280-92 | Tank 92 | X | | | | | | X | |
| 280-93 | Tank 93 | X | | | | | | X | |
| 280-94 | Tank 94 | X | | | | | | X | |
| 280-95 | Tank 95 | X | | | | | | X | |
| 280-97 | Tank 97 | X | | | | | | X | |
| 280-98 | Tank 98 | X | | | | | | X | |
| 280-100 | Tank 100 | X | | | | X | | | X |
| 280-103 | Tank 103 | X | | | | | | X | |
| 280-103A | Tank 103A | X | | | | | | X | |

Attachment E
Flexible Permit Numbers 47256 and PSDTX402M3
Page 4

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|-------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-104 | Tank 104 | X | | | | | | X | |
| 280-105 | Tank 105 | X | | | | | | X | |
| 280-106 | Tank 106 | X | | | | | | X | |
| 280-110 | Tank 110 | X | | | | | | X | |
| 280-117 | Tank 117 | X | | | | | | X | |
| 280-117A | Tank 117A | X | | | | | | X | |
| 280-118 | Tank 118 | X | | | | | | X | |
| 280-127 | Tank 127 | X | | | | | | X | |
| 280-128 | Tank 128 | X | | | | | | X | |
| 280-129 | Tank 129 | X | | | | | | X | |
| 280-130 | Tank 130 | X | | | | | | X | |
| 280-131 | Tank 131 | X | | | | | | X | |
| 280-140 | Tank 140 | X | | | | | | X | |
| 280-181 | Tank 181 | X | | | | | | X | |
| 280-269 | Tank 269 | X | | | | | | X | |
| 280-269A | Tank 269A | X | | | | | | X | |
| 280-270 | Tank 270 | X | | | | | | X | |
| 280-295 | Tank 295 | X | | | | | | X | |
| 280-296 | Tank 296 | X | | | | | | X | |
| 280-297 | Tank 297 | X | | | | | | X | |
| 280-298 | Tank 298 | X | | | | | | X | |
| 280-501 | Tank 501 | X | | | | | | X | |
| 280-502 | Tank 502 | X | | | | | | X | |
| 280-503 | Tank 503 | X | | | | | | X | |
| 280-504 | Tank 504 | X | | | | | | X | |
| 280-528 | Tank 528 | X | | | | | | X | |
| 280-529 | Tank 529 | X | | | | | | X | |
| 280-530 | Tank 530 | X | | | | | | X | |
| 280-531 | Tank 531 | X | | | | | | X | |
| 280-536 | Tank 536 | X | | | | | | X | |
| 280-560 | Tank 560 | X | | | | | | X | |

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|-----------|----------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 280-561 | Tank 561 | X | | | | | | X | |
| 280-652 | Tank 652 | X | | | | | | X | |
| 280-653 | Tank 653 | X | | | | | | X | |
| 280-1004 | Tank 1004 | X | | | | | | X | |
| 280-1004A | Tank 1004A | X | | | | | | X | |
| 280-1018 | Tank 1018 | X | | | | | | X | |
| 280-1020 | Tank 1020 | X | | | | | | X | |
| 280-1021 | Tank 1021 | X | | | | | | X | |
| 280-1023 | Tank 1023 | X | | | | | | X | X |
| 280-1024 | Tank 1024 | X | | | | | | X | |
| 280-1025 | Tank 1025 | X | | | | | | X | |
| 280-1039 | Tank 1039 | X | | | | | | X | |
| 280-1045 | Tank 1045 | X | | | | | | X | |
| 280-1046 | Tank 1046 | X | | | | | | X | |
| 280-1047 | Tank 1047 | X | | | | | | X | |
| 280-1048 | Tank 1048 | X | | | | | | X | |
| 280-1051 | Tank 1051 | X | | | | | | X | X |
| 280-1055 | Tank 1055 | X | | | | | | X | |
| 280-3010 | Tank 3010 | X | | | | | | X | |
| 280-4000 | Tank 4000 | X | | | | | | X | |
| 280-4011 | Tank 4011 | X | | | | | | X | |
| 280-4016 | Tank 4016 | X | | | | | | X | |
| 294-1 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-2 | Thermal Oxidizer | X | X | X | X | | | X | |
| 294-3 | Thermal Oxidizer | X | X | X | X | | | X | |
| 299-32 | Marine Dock | X | | | | | | X | |
| 299-33 | Marine Docks | X | | | | | | X | |
| 299-34 | Marine Docks | X | | | | | | X | |
| 299-37 | Marine Docks | X | | | | | | X | |
| 299-38 | Marine Docks | X | | | | | | X | |
| 311 | Refinery Flare No. 2 | X | X | X | X | X | | X | X |

Attachment E
Flexible Permit Numbers 47256 and PSDTX402M3
Page 6

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|----------|------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 321 | Refinery Flare No. 3 | X | X | X | X | X | | X | X |
| 331 | Refinery Flare No. 4 | X | X | X | X | X | | X | X |
| 351A | ULC Flare | X | X | X | X | X | | X | X |
| 381 | SRU A/B Flare | X | X | X | X | X | | X | X |
| 383 | SRU C/D Flare | X | X | X | X | X | | X | X |
| 384 | SRU Incinerator C and D | X | X | X | X | | X | | |
| 391 | DDU B-101/102 Heaters | X | X | X | X | | X | | |
| 392 | DDU B-201/202 Heaters | X | X | X | X | | X | | |
| 394 | DDU B-301 Heater | X | X | X | X | | X | | |
| 395 | DDU B-302 Reboiler | X | X | X | X | | X | | |
| 396A | DDU Flare | X | X | X | X | X | | X | X |
| 400 | Flare 8 | X | X | X | X | X | | X | X |
| 411 | Alky 2 Cooling Tower | X | | | | | X | | |
| 412 | Coker Cooling Tower | X | | | | | X | | |
| 413 | FCCU 1 Cooling Tower | X | | | | | X | | |
| 415 | FCCU 3 Cooling Tower | X | | | | | X | | |
| 416 | Power 3 Cooling Tower | X | | | | | X | | |
| 418 | ULC Cooling Tower | X | | | | | X | | |
| 419 | NDU Cooling Tower | X | | | | | X | | |
| 421 | UU3 Cooling Tower | X | | | | | X | | |
| 426 | CFHU Cooling Tower | X | | | | | X | | |
| 453 | Oil/Water Separator | X | | | | | | X | |
| 454 | Oil/Water Separator | X | | | | | | X | |
| 471 | CFHU Heaters 101-B and 102-B | X | X | X | X | | X | | |
| 480-1012 | Tank 1012 | X | | | | | | X | |
| 480-1013 | Tank 1013 | X | | | | | | X | |
| 481 | RHU Heaters Train 200 | X | X | X | X | | X | | |
| 482 | RHU Heaters Train 300 | X | X | X | X | | X | | |
| 483 | RHU Heaters Train 400 | X | X | X | X | | X | | |
| 484 | RHU Fractionation Heaters | X | X | X | X | | X | | |

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|---------|--|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| 485 | RHU VRS Hot Oil Heater | X | X | X | X | | X | | |
| 501 | CFHU Flare 1 | X | X | X | X | X | | X | X |
| 550 | RDU Heater | X | X | X | X | | X | | |
| 551 | RDU Fugitives | X | | | | | | X | |
| E-02/03 | FCCU1 Waste Water Vent 3 | X | | | | | | X | |
| E-06 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-08 | Oil/Water Separator - FCCU 2 Unit | X | | | | | | X | |
| E-13 | Oil/Water Separator - FCCU 3 Unit | X | | | | | | X | |
| E-14 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-16 | Oil/Water Separator - Pipe Stills Unit | X | | | | | | X | |
| E-34 | Oil/Water Separator - RDU Unit | X | | | | | | X | |
| E-35 | Oil/Water Separator - CFHU Unit | X | | | | | | X | |
| E-48 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-63 | Oil/Water Separator - RHU Unit | X | | | | | | X | |
| E-68 | Lab Wastewater Collection Sump | X | | | | | | X | |
| E-69 | Environmental Facilities Sump | X | | | | | | X | |
| E-98 | Exchanger Pad Dry Weather Sump #30 | X | | | | | | X | |
| E-99 | Dry Weather Sump #33 | X | | | | | | X | |
| F-8 | Activated Sludge Unit No. 1 | X | | | | | | X | X |
| F-9 | Activated Sludge Unit No. 2 | X | | | | | | X | X |
| F-11 | Final Clarifier Tank No. 2 | X | | | | | | X | X |

| EPN | Source Name | Emissions from emission point included in normal operations emission caps for: | | | | | | | |
|--------|------------------------------------|--|-----------------|----|-----------------|------------------|------------------|---------|-----------------|
| | | VOC | NO _x | CO | SO ₂ | H ₂ S | PM ₁₀ | Benzene | NH ₃ |
| F-22 | Clarifier Effluent Tank | X | | | | | | X | X |
| F-30 | FCCU 3 Fugitives | X | | | | X | | X | X |
| F-30 | Final Effluent Tank | X | | | | | | X | X |
| F-60 | FCCU 2 Fugitives | X | | | | X | | X | X |
| F-90 | FCCU1 Fugitives | X | | | | X | | X | X |
| F-160 | UU3 Fugitives | X | | | | | | X | |
| F-200 | Ultracracker Fugitives | X | | | | X | | X | |
| F-270 | API Separator No. 3A | X | | | | | | X | |
| F-280 | Tank Farm Fugitives | X | | | | | | X | |
| F-294 | Marine Loading Fugitives | X | | | | | | X | |
| F-380 | SRU Fugitives | X | | | | X | | | |
| F-390 | DDU 100/200 Fugitives | X | | | | X | | X | |
| F-393 | DDU 300 Fugitives | X | | | | X | | X | X |
| F-400 | Flare 8 Fugitives | X | | | | X | | X | |
| F-470 | CFHU Fugitives | X | | | | X | | X | |
| F-480 | RHU Fugitives | X | | | | | | X | |
| F-486 | HRU Fugitives | X | | | | X | | X | |
| F-490 | Acid Plant H ₂ S Feed | X | | | | | | | |
| F-491 | Acid Plant Sludge Feed | X | | | | | | | |
| FLR-SW | SRU Sour Water System Flare | X | X | X | X | X | | X | X |
| W-01 | Oil/Water Separator - UU4 Unit | X | | | | | | X | |
| W-02 | Oil/Water Separator - DDU Unit | X | | | | | | X | |
| W-06 | Oil/Water Separator - ULC/ARU Unit | X | | | | | | X | |
| W-07 | Oil/Water Separator - ULC Unit | X | | | | | | X | |
| W-12 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |
| W-13 | Oil/Water Separator - UU3 Unit | X | | | | | | X | |

- X Emissions from this EPN are included in both the initial and final emission cap.
- (1) Facility does not participate in normal operation annual cap for VOC, PM₁₀, or CO. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.
 - (2) Facility does not participate in normal operation annual cap for VOC, NO_x, CO, SO₂, or PM₁₀. The facility does participate in the normal operation short-term cap (lb/hr) and the MSS cap for all air contaminants.

Date: January 15, 2014

Emission Sources – Emission Caps and Individual Emission Limits

Flexible Permit Numbers 47256 and PSDTX402M3

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

| Air Contaminants Data | | | | |
|--|---------------------|-----------------------------|----------------|---------|
| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
| | | | lbs/hour | TPY (4) |
| Normal Operations | | | | |
| See Attachment E | See Attachment E | VOC | 1519.98 | 1890.58 |
| | | NO _x | 766.12 | 2510.50 |
| | | CO | 1256.63 | 2888.07 |
| | | SO ₂ | 1404.10 | 4624.81 |
| | | H ₂ S | 4.40 | 13.19 |
| | | PM ₁₀ | 186.08 | 364.06 |
| | | Benzene (5) | 33.01 | 79.86 |
| | | NH ₃ | 12.53 | 39.07 |
| Planned Maintenance, Startup, and Shutdown Activities | | | | |
| See Attachments A-D | See Attachments A-D | VOC | 2433.78 | 172.50 |
| | | NO _x | 157.86 | 24.36 |
| | | CO | 790.56 | 136.31 |
| | | SO ₂ | 8419.88 | 842.16 |
| | | H ₂ S | 89.57 | 9.31 |
| | | Benzene (5) | 33.12 | 2.05 |
| | | NH ₃ | 18.40 | 1.86 |
| Planned Turnaround Maintenance, Startup, and Shutdown Activities | | | | |
| See Attachments A-D | See Attachments A-D | VOC (6) | 3133.28 | 91.70 |
| | | NO _x (6) | 325.87 | 10.56 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|----------------------------|----------------------|-------------------------------------|----------------|---------|
| | | | lbs/hour | TPY (4) |
| | | CO (6) | 3627.58 | 75.48 |
| | | SO ₂ (6) | 8089.14 | 20.68 |
| | | H ₂ S (6) | 87.70 | 0.32 |
| | | PM ₁₀ (6) | 123.64 | 1.04 |
| | | Benzene (5) (6) | 28.05 | 0.23 |
| Individual Emission Limits | | | | |
| 34 | FCCU No. 3 | VOC | | 33.98 |
| | | PM ₁₀ /PM _{2.5} | | 299.67 |
| | | CO | | 499.23 |
| | | H ₂ SO ₄ (7) | 31.68 | 108.20 |
| | | O ₃ | 10.00 | 25.00 |
| 203 | ULC-102B Heater | VOC | | 1.44 |
| | | NO _x | | 25.55 |
| | | CO | | 19.50 |
| | | SO ₂ | | 7.13 |
| | | PM | | 1.99 |
| 205 | ULC-104BA/BB Heaters | VOC | | 4.65 |
| | | NO _x | | 104.07 |
| | | CO | | 62.87 |
| | | SO ₂ | | 22.86 |
| | | PM | | 6.43 |
| 280-118 | Tank 118 | VOC | 0.48 | 1.26 |
| | | Benzene | 0.13 | 0.07 |

Emission Sources - Maximum Allowable Emission Rates

- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
- (2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
CO - carbon monoxide
SO₂ - sulfur dioxide
H₂S - hydrogen sulfide
H₂SO₄ - sulfuric acid mist
O₃ - ozone
PM - particulate matter
PM₁₀ - particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
PM_{2.5} - PM equal to or less than 2.5 microns in diameter.
NH₃ - ammonia
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) The emission rates listed for the benzene cap are included in the VOC cap.
- (6) Annual emissions from planned turnaround maintenance, startup, and shutdown (MSS) activities are above and beyond the emissions from normal operations and planned MSS activities. Short-term emissions from the plant due to normal operations, planned MSS activities, and planned turnaround MSS activities should not exceed the short-term planned turnaround MSS activities emission rates.
- (7) Short term H₂SO₄ emission rate is included in the short term routine PM₁₀ cap. Annual H₂SO₄ emission rate is included in the individual annual PM emission rate for EPN 34.

Date: January 15, 2014

